Certificate number: 2022-IVDD/CE382

Certificate of CE-Notification

This is to certify that, in accordance with the *In Vitro* Diagnostic Medical Device Directive 98/79/EC, **CEpartner4U BV** agrees to perform all duties and responsibilities as the Authorized Representative for

Monocent Inc.
9237 Eton Ave.,
Chatsworth, CA 91311
United States

as stipulated and demanded by the aforementioned Directive. The Dutch Competent Authorities have accepted the manufacturer's medical device registrations by CEpartner4U as listed on the product list attached to the manufacturer's Declaration of Conformity:

IVD devices were registered with the Dutch Competent Authority with registration number:

IVD Devices groups:	Registration number:
CLIA Test Kits	NL-CA002-2020-50897
ELISA Test Kits	NL-CA002-2020-50898
IFA Test Kits	NL-CA002-2020-50899
Instruments	NL-CA002-2020-50900
PCR Test Kits	NL-CA002-2020-50901
Rapid Tests	NL-CA002-2020-50902
Serology Test Kits	NL-CA002-2020-50903

see appendix

The manufacturer has provided CEpartner4U with all necessary documentation, together with an appropriate Declaration of Conformity that the IVD medical devices fulfil the essential requirements of Directive 98/79/EC.

Issue date: 2022-10-31

This Certificate of CE-Notification is valid until May 26, 2025

R. Nusselder
Sr. consultant CEpartner4U BV

Digitally signed by Monastîrschii Viorica
Date: 2023.04.06 15:29:55 EEST
Reason: MoldSign Signature
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AUTHORIZED REPRESENTATIVE AND CONSULTING SERVICE FOR CE MARKING **CEPARTNER4U BV,**
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Appendix

List of devices.

CLIA Device Group	Ref. No.	IVDD Risk class	IVDR Risk class	GMDN code	First CE-marking
Allergy Assays					
IgE	CL3-5055	Low Risk	C	30275	2020-04-14
Thyroid Assays					
T3	CL3-5028	Low Risk	C	30312	2020-04-14
T4	CL3-5029	Low Risk	C	30314	2020-04-14
TSH	CL2-5030	Low Risk	C	30318	2020-04-14
T3 Uptake	CL3-5072	Low Risk	C	30313	2020-04-14
FT3	CL3-5026	Low Risk	C	30309	2020-04-14
FT4	CL3-5027	Low Risk	C	30308	2020-04-14
Tg (Thyroglobulin)	CL3-5073	Low Risk	C	30490	2020-04-14
TBG	CL3-5074	Low Risk	C	30316	2020-04-14
Anti-Tg	CL3-5075	Low Risk	C	30490	2020-04-14
Anti-TPO	CL3-5076	Low Risk	C	30317	2020-04-14
Ultra-Sensitive TSH	CL2-5077	Low Risk	C	30318	2020-04-14
Fertility Assays					
LH	CL3-5006	Low Risk	C	38965	2020-04-14
FSH	CL3-5004	Low Risk	C	30322	2020-04-14
Prolactin	CL3-5008	Low Risk	C	30325	2020-04-14
hCG	CL2-5005	Low Risk	B	30513	2020-04-14
AMH	CL3-5069	Low Risk	C	43148	2020-04-14
Beta hCG	CL2-5055	Low Risk	B	30332	2020-04-14
HGH	CL3-5007	Low Risk	C	30333	2020-04-14
PAPP-A	CL3-5068	Low Risk	C	31533	2020-04-14
Diabetes Assays					
Insulin	CL2-5003	Low Risk	C	30338	2020-04-14
C-peptide	CL2-5002	Low Risk	C	30336	2020-04-14
Tumor Markers Assays					
AFP	CL3-5031	Low Risk	C	30295	2020-04-14
CEA	CL3-5036	Low Risk	C	30288	2020-04-14
Free Beta hCG	CL2-5037	Low Risk	C	30333	2020-04-14
Beta 2 Microglobulin	CL2-5032	Low Risk	C	30296	2020-04-14
NSE	CL2-5039	Low Risk	C	30301	2020-04-14
CA-12-5	CL3-5034	Low Risk	C	30283	2020-04-14
CA-19-9	CL2-5035	Low Risk	C	30280	2020-04-14
CA-15-3	CL2-5033	Low Risk	C	30279	2020-04-14
Ferritin	CL3-5001	Low Risk	C	30377	2020-04-14
Cyfra21-1	CL2-5079	Low Risk	C	44431	2020-04-14
Pro-GRP	CL2-5080	Low Risk	C	44438	2020-04-14
PAP	CL2-5081	Low Risk	C	34226	2020-04-14
Steroid Assays					
Progesterone	CL3-5021	Low Risk	C	30294	2020-04-14
Estradiol	CL3-5016	Low Risk	C	30321	2020-04-14
Testosterone	CL3-5022	Low Risk	C	30327	2020-04-14

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CLIA Device Group	Ref. No.	IVDD Risk class	IVDR Risk class	GMDN code	First CE-marking
Free Testosterone	CL9-5023	Low Risk	C	30327	2020-04-14
Testosterone (Saliva)	CL9-5025	Low Risk	C	30327	2020-04-14
5a-Androstane-3a, 17b-diol Glucuronide (3a- Diol G)	CL9-5009	Low Risk	C	31533	2020-04-14
17 OH Progesterone	CL3-5010	Low Risk	C	30324	2020-04-14
Androstenedione	CL3-5070	Low Risk	C	30319	2020-04-14
Aldosterone	CL3-5011	Low Risk	C	31428	2020-04-14
Cortisol	CL3-5012	Low Risk	C	31394	2020-04-14
DHEA	CL3-5013	Low Risk	C	39894	2020-04-14
DHEA-S	CL3-5014	Low Risk	C	39894	2020-04-14
uE3	CL3-5041	Low Risk	C	30330	2020-04-14
Estriol (Saliva)	CL9-5018	Low Risk	C	30329	2020-04-14
Estrone (Saliva)	CL9-5019	Low Risk	C	33293	2020-04-14
Estrone	CL3-5020	Low Risk	C	33293	2020-04-14
Plasma Renin Activity (PRA)	CL9-5024	Low Risk	C	43444	2020-04-14
SHBG	CL3-5071	Low Risk	C	30326	2020-04-14
Procalcitonin	CL3-5067	Low Risk	C	12069016	2020-04-14
Infectious Disease Assays					
Digoxin	CL3-5059	Low Risk	C	30386	2020-04-14
hs-CRP	CL2-5060	Low Risk	C	30499	2020-04-14
CK-MB	CL3-5061	Low Risk	C	30499	2020-04-14
Myoglobin	CL3-5062	Low Risk	C	30264	2020-04-14
cTn I	CL2-5063	Low Risk	C	30266	2020-04-14
Bone Metabolism					
ACTH	CL3-5017	Low Risk	C	39005	2020-04-14
Calcitonin	CL3-5064	Low Risk	C	30342	2020-04-14
PTH	CL3-5065	Low Risk	C	30353	2020-04-14
Vitamin D	CL3-5066	Low Risk	C	30350	2020-04-14
Autoimmune Disease					
Cardiolipin IgA	CL2-5051	Low Risk	C	30475	2020-04-14
Cardiolipin IgG	CL2-5052	Low Risk	C	30475	2020-04-14
Cardiolipin IgM	CL2-5053	Low Risk	C	30475	2020-04-14
ds-DNA	CL2-5054	Low Risk	C	30458	2020-04-14
RF IgM	CL2-5114	Low Risk	C	30500	2020-04-14
B2GP1 IgA	CL2-5115	Low Risk	C	30478	2020-04-14
B2GP1 IgG	CL2-5116	Low Risk	C	30478	2020-04-14
B2GP1 IgM	CL2-5117	Low Risk	C	30478	2020-04-14
Thyroglobulin IgG	CL2-5118	Low Risk	C	30315	2020-04-14
Anti-CCP	CL2-5119	Low Risk	C	44202	2020-04-14
Anemia Assays					
Folate	CL3-5056	Low Risk	C	30378	2020-04-14
Vitamin B12	CL3-5057	Low Risk	C	30384	2020-04-14
Transferrin Soluble Receptor (sTfR)	CL3-5058	Low Risk	C	30253	2020-04-14
NeoNatal Assays					
Neonatal TSH	CL2-5078	Low Risk	C	30310	2020-04-14

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CLIA Device Group	Ref. No.	IVDD Risk class	IVDR Risk class	GMDN code	First CE-marking
Infectious Disease Assays					
H. pylori IgA	CL2-5048	Low Risk	B	30691	2020-04-14
H. pylori IgG	CL2-5049	Low Risk	B	30691	2020-04-14
H. pylori IgM	CL2-5050	Low Risk	B	30691	2020-04-14
H. pylori IgG (Quantitative)	CL2-5082	Low Risk	B	30691	2020-04-14
H. pylori Antigen	CL2-5083	Low Risk	B	30691	2020-04-14
EBV VCA IgA	CL2-5084	Low Risk	D	30809	2020-04-14
EBV VCA IgG	CL2-5085	Low Risk	D	30809	2020-04-14
EBV VCA IgM	CL2-5086	Low Risk	D	30809	2020-04-14
EBV EA-D IgA	CL2-5087	Low Risk	D	30809	2020-04-14
EBV EA-D IgG	CL2-5088	Low Risk	D	30809	2020-04-14
EBV EA-D IgM	CL2-5089	Low Risk	D	30809	2020-04-14
EBNA IgA	CL2-5090	Low Risk	D	30808	2020-04-14
EBNA IgG	CL2-5091	Low Risk	D	30808	2020-04-14
EBNA IgM	CL2-5092	Low Risk	D	30808	2020-04-14
Measles IgG	CL2-5093	Low Risk	C	44019	2020-04-14
Measles IgM	CL2-5094	Low Risk	C	44019	2020-04-14
VZV IgG	CL2-5095	Low Risk	C	44027	2020-04-14
VZV IgM	CL2-5096	Low Risk	C	44027	2020-04-14
Mumps IgG	CL2-5097	Low Risk	C	33908	2020-04-14
Mumps IgM	CL2-5098	Low Risk	C	33908	2020-04-14
Dengue IgG	CL2-5099	Low Risk	C	32481	2020-04-14
Dengue IgM	CL2-5100	Low Risk	C	32481	2020-04-14
HSV 1/2 IgG	CL2-5101	Low Risk	C	40176	2020-04-14
HSV 1/2 IgM	CL2-5102	Low Risk	C	40176	2020-04-14
HSV 1 IgA	CL2-5103	Low Risk	C	38870	2020-04-14
HSV 1 IgG	CL2-5104	Low Risk	C	38870	2020-04-14
HSV 1 IgM	CL2-5105	Low Risk	C	38870	2020-04-14
HSV 2 IgA	CL2-5106	Low Risk	C	38875	2020-04-14
HSV 2 IgG	CL2-5107	Low Risk	C	38875	2020-04-14
HSV 2 IgM	CL2-5108	Low Risk	C	38875	2020-04-14

ELISA Device Group	Ref. No.	IVDD Risk class	IVDR Risk class	GMDN code	First CE-marking
Allergy					
Total Human IgE	EL1-1000, EL2-1000	Low Risk	B	30275	2020-04-14
Human Specific IgG	EL15-1001	Low Risk	C	44211	2020-04-14
Human Specific IgG4	EL15-1002	Low Risk	C	44211	2020-04-14
Histamine	EL30-1003	Low Risk	C	30274	2020-04-14
Anemia					
Vitamin B12	EL1-1007	Low Risk	B	30384	2020-04-14
Folate	EL1-1005	Low Risk	B	30378	2020-04-14
sTfR-Transferrin Soluble Receptor	EL3-1006	Low Risk	B	30253	2020-04-14
Ferritin	EL1-1004	Low Risk	B	30377	2020-04-14

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ELISA Device Group	Ref. No.	IVDD Risk class	IVDR Risk class	GMDN code	First CE-marking
Hepcidin	EL1-1008	Low Risk	B	12070190	2020-04-14
Autoimmune Disease					
Anti-CCP	EL2-1011	Low Risk	B	44202	2020-04-14
Anti-CP IgG	EL20-1288	Low Risk	B	44202	2020-04-14
Beta 2 Glycoprotein 1 IgA	EL2-1017	Low Risk	B	30478	2020-04-14
Beta 2 Glycoprotein 1 IgG	EL2-1018	Low Risk	B	30478	2020-04-14
Beta 2 Glycoprotein 1 IgM	EL2-1019	Low Risk	B	30478	2020-04-14
Anti-Tissue Transglutaminase IgG	EL20-1015	Low Risk	C	44385	2020-04-14
Anti-Tissue Transglutaminase IgA	EL20-1014	Low Risk	C	44385	2020-04-14
ANA Screen IgG	EL1-1009	Low Risk	B	30454	2020-04-14
ENA IgG Profile-6	EL10-1024	Low Risk	B	30455	2020-04-14
ENA Screen IgG	EL20-1025	Low Risk	B	30455	2020-04-14
Rheumatoid Factor (RF) IgA	EL15-1034	Low Risk	B	30500	2020-04-14
Rheumatoid Factor (RF) IgG	EL15-1035	Low Risk	B	30500	2020-04-14
Rheumatoid Factor (RF) IgM	EL2-1038	Low Risk	B	30500	2020-04-14
Sm/RNP IgG	EL1-1040	Low Risk	B	30464	2020-04-14
Sm IgG	EL1-1041	Low Risk	B	17276	2020-04-14
Jo-1 IgG	EL21-1029	Low Risk	C	30461	2020-04-14
Scl-70 IgG	EL1-1039	Low Risk	B	30463	2020-04-14
SS-A (Ro)	EL1-1042	Low Risk	B	44202	2020-04-14
SS-B (La)	EL1-1043	Low Risk	B	44202	2020-04-14
dsDNA	EL1-1023	Low Risk	B	30458	2020-04-14
Cardiolipin IgG	EL1-1021	Low Risk	C	30475	2020-04-14
Cardiolipin IgM	EL1-1022	Low Risk	C	30475	2020-04-14
Cardiolipin IgA	EL1-1020	Low Risk	C	30475	2020-04-14
Cardiolipin Total Ab	EL1-1044	Low Risk	C	30475	2020-04-14
Mitochondrial Antibody (MA)	EL1-1031	Low Risk	C	30476	2020-04-14
Thyroglobulin Antigen (Anti-Tg)	EL3-1016	Low Risk	C	30315	2020-04-14
PR3 (c-ANCA)	EL20-1033	Low Risk	B	30484	2020-04-14
ANCA screen IgG	EL10-1010	Low Risk	B	30483	2020-04-14
MPO, Myeloperoxidase (p-ANCA)	EL20-1032	Low Risk	B	30483	2020-04-14
Gliadin IgG	EL36-1026	Low Risk	C	30480	2020-04-14
Gliadin IgA	EL36-1027	Low Risk	C	30480	2020-04-14
TPO	EL1-1012	Low Risk	C	30317	2020-04-14
Anti-Phospholipids Screen	EL20-1013	Low Risk	B	30582	2020-04-14
ASMA	EL29-1302	Low Risk	B	30274	2020-04-14
Beta-2-Glycoprotein IgA	EL2-1017	Low Risk	B	30478	2020-04-14
Beta-2-Glycoprotein IgG	EL2-1018	Low Risk	B	30478	2020-04-14
Beta-2-Glycoprotein IgM	EL2-1019	Low Risk	B	30478	2020-04-14
Tumor markers					
Prostatic Acid Phosphatase (PAP)	EL2-1289	Low Risk	C	34226	2020-04-14
Beta-2-Microglobulin	EL2-1277	Low Risk	C	30296	2020-04-14
AFP (Alpha Fetoprotein)	EL1-1276	Low Risk	C	43480	2020-04-14
CEA	EL1-1283	Low Risk	C	30288	2020-04-14
CA-15-3	EL1-1279	Low Risk	C	30279	2020-04-14
CA-12-5	EL1-1278	Low Risk	C	30283	2020-04-14

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ELISA Device Group	Ref. No.	IVDD Risk class	IVDR Risk class	GMDN code	First CE-marking
CA-19-9	EL1-1280	Low Risk	C	30280	2020-04-14
NSE	EL2-1286	Low Risk	C	30301	2020-04-14
Free Beta HCG	EL1-1284	Low Risk	C	30333	2020-04-14
Pro-GRP (Gastrin-Releasing Peptide)	EL2-1290	Low Risk	C	44438	2020-04-14
Chromogranin A	EL1-1281	Low Risk	C	30289	2020-04-14
HE4	EL1-1306	Low Risk	C	30289	2020-04-14
Cyfra21-1	EL2-1034	Low Risk	C	30289	2020-04-14
Bone Metabolism					
Intact PTH	EL3-1048	Low Risk	C	30353	2020-04-14
25-OH Vitamin D	EL1-1045	Low Risk	B	30350	2020-04-14
ACTH	EL3-1046	Low Risk	C	39005	2020-04-14
Cardiac					
Digoxin	EL3-1051	Low Risk	C	30386	2020-04-14
CK-MB	EL3-1050	Low Risk	C	30499	2020-04-14
Troponin I	EL1-1054	Low Risk	C	30266	2020-04-14
Myoglobin	EL6-1053	Low Risk	C	30264	2020-04-14
C-Reactive Protein (CRP)	EL1-1049	Low Risk	C	30499	2020-04-14
Diabetes					
Insulin	EL1-1058	Low Risk	C	30338	2020-04-14
C-peptide	EL1-1055	Low Risk	C	30336	2020-04-14
Leptin	EL9-1059	Low Risk	B	12069017	2020-04-14
Adiponectin	EL9-1056	Low Risk	B	12069017	2020-04-14
(IGFBP-1) Insulin-Like Growth Factor Binding Protein-1	EL9-1057	Low Risk	B	42852	2020-04-14
Anti-GAD	EL8-1060	Low Risk	B	30340	2020-04-14
IAA	EL8-1061	Low Risk	B	30339	2020-04-14
IGF-1	EL8-1062	Low Risk	B	30361	2020-04-14
Pro-Insulin	EL1-1063	Low Risk	C	42852	2020-04-14
Fertility					
Human Growth Hormone (HGH)	EL1-1083	Low Risk	B	30333	2020-04-14
hCG Visual	EL6-1082	Low Risk	B	30513	2020-04-14
Beta hCG (Total)	EL2-1078	Low Risk	B	30332	2020-04-14
FSH	EL1-1080	Low Risk	B	31533	2020-04-14
LH	EL1-1084	Low Risk	B	38246	2020-04-14
Prolactin	EL1-1086	Low Risk	B	30325	2020-04-14
PAPP-A	EL3-1085	Low Risk	B	31533	2020-04-14
SHBG	EL3-1261	Low Risk	B	30326	2020-04-14
AMH	EL3-1079	Low Risk	B	43148	2020-04-14
hCG	EL1-1081	Low Risk	B	30332	2020-04-14
Sperm Ab	EL8-1087	Low Risk	B	30486	2020-04-14
Infectious Diseases					
Adenovirus IgG	EL15-1102	Low Risk	C	39468	2020-04-14
Adenovirus IgA	EL15-1101	Low Risk	C	39468	2020-04-14
Adenovirus IgM	EL15-1103	Low Risk	C	39468	2020-04-14
Influenza A IgA	EL15-1365	Low Risk	B	39463	2020-04-14
Influenza A IgG	EL15-1366	Low Risk	B	39463	2020-04-14

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ELISA Device Group	Ref. No.	IVDD Risk class	IVDR Risk class	GMDN code	First CE-marking
Influenza A IgM	EL15-1367	Low Risk	B	39463	2020-04-14
Influenza B IgA	EL15-1368	Low Risk	B	39463	2020-04-14
Influenza B IgG	EL15-1369	Low Risk	B	39463	2020-04-14
Influenza B IgM	EL15-1370	Low Risk	B	39463	2020-04-14
Chikungunya IgG	EL4-1114	Low Risk	D	32481	2020-04-14
Chikungunya IgM	EL4-1113	Low Risk	D	32481	2020-04-14
COVID-19 IgA	EL45-1373	Low Risk	D	42994	2020-04-14
COVID-19 IgG	EL1-1360	Low Risk	D	42994	2020-04-14
COVID-19 IgM	EL1-1361	Low Risk	D	42994	2020-04-14
COVID-19 IgG	EL36-1360R	Low Risk	D	42994	2020-04-14
COVID-19 IgM	EL36-1361R	Low Risk	D	42994	2020-04-14
COVID-19 IgG	EL45-1360	Low Risk	D	42994	2020-04-14
COVID-19 IgM	EL45-1361	Low Risk	D	42994	2020-04-14
COVID-19 Total Ab	EL45-1379	Low Risk	D	42994	2020-12-06
Mycobacterium Tuberculosis (TB) IgA	EL15-1317	Low Risk	C	30635	2020-04-14
Mycobacterium Tuberculosis (TB) IgG	EL15-1201	Low Risk	C	30635	2020-04-14
Mycobacterium Tuberculosis (TB) IgM	EL15-1202	Low Risk	C	30635	2020-04-14
Herpes Simplex 1 IgG (HSV1 IgA)	EL2-1162	Low Risk	C	38870	2020-04-14
Herpes Simplex 1 IgG (HSV1 IgG)	EL1-1163	Low Risk	C	38870	2020-04-14
Herpes Simplex 1 IgM (HSV1 IgM)	EL1-1164	Low Risk	C	38870	2020-04-14
Herpes Simplex 2 IgG (HSV2 IgG)	EL1-1165	Low Risk	C	38875	2020-04-14
Herpes Simplex 2 IgM (HSV2 IgM)	EL1-1166	Low Risk	C	38875	2020-04-14
Herpes Simplex 1,2 IgG (HSV1,2 IgG)	EL1-1167	Low Risk	C	40176	2020-04-14
Herpes Simplex 1,2 IgM (HSV1,2 IgM)	EL1-1168	Low Risk	C	40176	2020-04-14
Epstein Barr Virus VCA IgA (EBV, VCA IgA)	EL2-1135	Low Risk	D	30809	2020-04-14
Epstein Barr Virus VCA IgG (EBV, VCA IgG)	EL1-1136	Low Risk	D	30809	2020-04-14
Epstein Barr Virus VCA IgM (EBV, VCA IgM)	EL1-1137	Low Risk	D	30809	2020-04-14
Epstein Barr Virus Early Antigen (EA) IgM	EL2-1134	Low Risk	D	30809	2020-04-14
Epstein Barr Virus Early Antigen (EA) IgG	EL2-1133	Low Risk	D	30809	2020-04-14
Epstein Barr Virus Early Antigen (EA) IgA	EL2-1132	Low Risk	D	30809	2020-04-14
Epstein Barr Virus Nuclear Antigen (EBNA) IgG	EL2-1130	Low Risk	D	30808	2020-04-14
Epstein Barr Virus Nuclear Antigen (EBNA) IgM	EL2-1131	Low Risk	D	30808	2020-04-14
Epstein Barr Virus Nuclear Antigen (EBNA) IgA	EL2-1129	Low Risk	D	30808	2020-04-14
Measles IgG	EL1-1177	Low Risk	C	44019	2020-04-14
Measles IgM	EL1-1178	Low Risk	C	44019	2020-04-14
Mumps IgG	EL1-1179	Low Risk	C	33908	2020-04-14
Mumps IgM	EL1-1180	Low Risk	C	33908	2020-04-14
Mycoplasma pneumonia IgG	EL1-1181	Low Risk	C	30657	2020-04-14
Mycoplasma pneumonia IgM	EL1-1182	Low Risk	C	30657	2020-04-14
Syphilis (TPA) IgG	EL1-1195	Low Risk	C	30685	2020-04-14
Syphilis (TPA) IgM	EL1-1197	Low Risk	C	30685	2020-04-14
Legionela urine Ag detection	EL16-1175	Low Risk	C	30692	2020-04-14
H. pylori IgG	EL1-1140	Low Risk	B	30691	2020-04-14
H. pylori IgA	EL1-1139	Low Risk	B	30691	2020-04-14
H-Pylori IgM	EL1-1141	Low Risk	B	30691	2020-04-14
H. pylori Antigen	EL2-1138,	Low Risk	B	30691	2020-04-14

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ELISA Device Group	Ref. No.	IVDD Risk class	IVDR Risk class	GMDN code	First CE-marking
	EL32-1138				
Varicella-Zoster IgG	EL1-1209	Low Risk	C	44027	2020-04-14
Varicella-Zoster IgM	EL1-1210	Low Risk	C	44027	2020-04-14
HEV IgG	EL13-1156	Low Risk	C	30757	2020-04-14
HEV IgM	EL13-1161	Low Risk	C	30758	2020-04-14
HAV Ab	EL7-1142	Low Risk	C	30721	2020-04-14
HAV IgM	EL7-1143	Low Risk	C	30722	2020-04-14
HDV IgG	EL7-1153	Low Risk	D	30750	2020-04-14
HDV IgM	EL7-1155	Low Risk	D	30752	2020-04-14
HDV Ab	EL13-1315	Low Risk	D	30750	2020-04-14
HDV Ag	EL13-1316, EL7-1154	Low Risk	D	30747	2020-04-14
HTLV 1 + 2 Ab	EL7-1160	Low Risk	C	30789	2020-04-14
Lyme Disease IgG	EL10-1171	Low Risk	C	30697	2020-04-14
Lyme Disease IgM	EL10-1172	Low Risk	C	30697	2020-04-14
Lyme Disease IgG, M	EL10-1173	Low Risk	C	30697	2020-04-14
Bordetella Pertussis IgA	EL15-1110	Low Risk	C	37723	2020-04-14
Bordetella Pertussis IgG	EL15-1111	Low Risk	C	37723	2020-04-14
Bordetella Pertussis IgM	EL15-1112	Low Risk	C	37723	2020-04-14
RSV IgA	EL15-1186	Low Risk	B	30814	2020-04-14
RSV IgG	EL15-1187	Low Risk	B	30814	2020-04-14
RSV IgM	EL15-1188	Low Risk	B	30814	2020-04-14
Tetanus	EL5-1205	Low Risk	C	38876	2020-04-14
Diphtheria IgG	EL5-1124	Low Risk	D	33499	2020-04-14
Salmonella typhi IgG	EL1-1193	Low Risk	C	30709	2020-04-14
Salmonella typhi IgM	EL1-1194	Low Risk	C	30709	2020-04-14
Salmonella Antigen detection	EL4-1192	Low Risk	C	30709	2020-04-14
Anthrax IgG	EL1-1105	Low Risk	C	32481	2020-04-14
Babesia IgG	EL4-1109	Low Risk	C	32481	2020-04-14
Dengue IgM	EL5-1127	Low Risk	C	32481	2020-04-14
Dengue IgG/IgM	EL5-1125	Low Risk	C	32481	2020-04-14
Dengue IgG	EL5-1126	Low Risk	C	32481	2020-04-14
Dengue NS1 Antigen	EL4-1128	Low Risk	C	32481	2020-04-14
Japanese Encephalitis IgG	EL4-1169	Low Risk	C	44321	2020-04-14
Japanese Encephalitis IgM	EL4-1170	Low Risk	C	44321	2020-04-14
Leprosy IgG/IgM	EL4-1176	Low Risk	C	32481	2020-04-14
Parvovirus B19 IgG	EL30-1183	Low Risk	C	40443	2020-04-14
Parvovirus B19 IgM	EL30-1184	Low Risk	C	40444	2020-04-14
Rotavirus (fecal)	EL16-1185	Low Risk	C	30815	2020-04-14
Scrub Typhus IgG	EL4-1199	Low Risk	C	44028	2020-04-14
Scrub Typhus IgM	EL4-1200	Low Risk	C	44028	2020-04-14
TB IgA	EL15-1317	Low Risk	C	30635	2020-04-14
TB IgG	EL15-1201	Low Risk	C	30635	2020-04-14
TB IgM	EL15-1202	Low Risk	C	30635	2020-04-14
Zika Virus IgG	EL1-1203	Low Risk	C	32481	2020-04-14
Zika Virus IgM	EL1-1204	Low Risk	C	32481	2020-04-14

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ELISA Device Group	Ref. No.	IVDD Risk class	IVDR Risk class	GMDN code	First CE-marking
West Nile IgG	EL4-1211	Low Risk	C	42926	2020-04-14
West Nile IgM	EL4-1212	Low Risk	C	42926	2020-04-14
Parasitology					
Schistosoma IgG	EL5-1227	Low Risk	C	30824	2020-04-14
Chagas	EL5-1213	Low Risk	D	30820	2020-04-14
Cysticercosis IgG (T. solium)	EL5-1220	Low Risk	B	39979	2020-04-14
Campylobacter	EL16-1229	Low Risk	B	33948	2020-04-14
E. coli 0157 Ag detection	EL16-1232	Low Risk	B	37727	2020-04-14
E. histolytica IgG (Amebiasis)	EL5-1221	Low Risk	B	39979	2020-04-14
E. histolytica Dispar	EL16-1233	Low Risk	B	39979	2020-04-14
Echinococcus IgG	EL5-1222	Low Risk	B	30822	2020-04-14
Fasciola IgG	EL5-1216	Low Risk	B	34068	2020-04-14
Fasciola gigantica	EL5-1217	Low Risk	B	34068	2020-04-14
Filaria IgG4	EL4-1218	Low Risk	B	34068	2020-04-14
Leishmania	EL5-1223	Low Risk	C	30823	2020-04-14
Leptospira IgG	EL5-1224	Low Risk	C	30716	2020-04-14
Leptospira IgM	EL5-1226	Low Risk	C	30716	2020-04-14
Leptospira IgG/IgM	EL5-1225	Low Risk	C	30716	2020-04-14
Toxocara IgG	EL5-1228	Low Risk	C	34068	2020-04-14
Trichinella IgG	EL5-1215	Low Risk	C	33379	2020-04-14
Ascaris IgG	EL5-1219	Low Risk	B	39979	2020-04-14
Strongyloides IgG	EL5-1214	Low Risk	C	34068	2020-04-14
Crypto/Giardia Ag detection	EL16-1230	Low Risk	B	30675	2020-04-14
Cryptosporidium Ag detection	EL16-1231	Low Risk	B	30675	2020-04-14
Giardia antigen	EL16-1235	Low Risk	B	36173	2020-04-14
Giardia coprpantigen in stool	EL5-1361	Low Risk	B	36173	2020-04-14
Anti-Giardia IgA ELISA in saliva	EL5-1362	Low Risk	B	36173	2020-04-14
Entamoeba histolytica coproantigen in stool	EL5-1363	Low Risk	B	39979	2020-04-14
Adenovirus Antigen	EL16-1104	Low Risk	C	41274	2020-04-14
Steroid					
Aldosterone	EL3-1247	Low Risk	C	31428	2020-04-14
Cortisol	EL1-1249	Low Risk	C	31394	2020-04-14
Aldosterone	EL3-1247	Low Risk	B	31428	2020-04-14
Cortisol	EL1-1249	Low Risk	C	31394	2020-04-14
Cortisol Saliva	EL9-1250	Low Risk	C	31394	2020-04-14
Estradiol	EL1-1254	Low Risk	B	30321	2020-04-14
DHEA-S	EL1-1251	Low Risk	C	30320	2020-04-14
DHEA	EL3-1252	Low Risk	C	39894	2020-04-14
Progesterone	EL1-1259	Low Risk	C	30323	2020-04-14
Progesterone Saliva	EL9-1260	Low Risk	C	30294	2020-04-14
Testosterone	EL1-1263	Low Risk	B	30327	2020-04-14
Testosterone Saliva	EL9-1265	Low Risk	B	30327	2020-04-14
Free Testosterone	EL1-1264	Low Risk	B	30327	2020-04-14
Androstenedione	EL1-1248	Low Risk	C	30321	2020-04-14
Free Estriol	EL1-1257	Low Risk	B	30330	2020-04-14
Dihydrotestosterones (DHT)	EL9-1253	Low Risk	C	30327	2020-04-14

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ELISA Device Group	Ref. No.	IVDD Risk class	IVDR Risk class	GMDN code	First CE-marking
17-OH Progesterone	EL1-1245	Low Risk	C	30324	2020-04-14
5a-Androstane-3a, 17b-diol Glucuronide (3a- Diol G)	EL9-1246	Low Risk	C	31533	2020-04-14
Total Estrogen	EL9-1255	Low Risk	B	38858	2020-04-14
Estrone	EL3-1256	Low Risk	B	33293	2020-04-14
Pregnenolone	EL9-1258	Low Risk	B	33301	2020-04-14
Total Estriol	EL8-1266	Low Risk	B	30330	2020-04-14
Thyroid					
T3	EL1-1270	Low Risk	C	30314	2020-04-14
T4	EL1-1271	Low Risk	C	30312	2020-04-14
TSH	EL1-1273	Low Risk	C	30489	2020-04-14
U-TSH	EL6-1275	Low Risk	C	30489	2020-04-14
Free T4	EL1-1268	Low Risk	C	30308	2020-04-14
Free T3	EL1-1267	Low Risk	C	30309	2020-04-14
Reverse T3	EL9-1274	Low Risk	C	30311	2020-04-14
T Uptake	EL3-1269	Low Risk	C	30313	2020-04-14
Tg (Thyroglobulin)	EL1-1272	Low Risk	C	30490	2020-04-14
TBG (Thyroxine-Binding Globulin)	EL3-1262	Low Risk	C	30316	2020-04-14
Neo-Natal Panel					
Neo-Natal T4	EL1-1240	Low Risk	C	30273	2020-04-14
Neo-Natal TSH	EL1-1239	Low Risk	C	30310	2020-04-14
Neo-Natal TBG	EL3-1242	Low Risk	C	30316	2020-04-14
Neo-Natal 17-OH Progesterone	EL1-1236	Low Risk	C	30324	2020-04-14
Neo-Natal MSUD	EL1-1237	Low Risk	C	30273	2020-04-14
Neo-Natal PKU	EL1-1238	Low Risk	C	30273	2020-04-14
Neo-Natal IRT	EL1-1241	Low Risk	C	30273	2020-04-14
Neo-Natal Total Galactose	EL1-1243	Low Risk	C	30273	2020-04-14
G6PD	EL1-1303	Low Risk	C	30273	2020-04-14
Neo-Natal Biotinidase	EL1-1244	Low Risk	C	30273	2020-04-14
Others					
Procalcitonin	EL3-1309	Low Risk	C	12069016	2020-04-14
Calcitonin	EL3-1292	Low Risk	C	30342	2020-04-14
Renin	EL9-1300	Low Risk	B	43444	2020-04-14

IFA Device Group	Ref. No.	IVDD Risk class	IVDR Risk class	GMDN code	First CE-marking
Autoimmune Diseases and others					
ANA Rat Liver IFA Kit	IF17-4002, IF17-4019	Low Risk	C	41420	2020-04-14
ANA Mouse Kidney IFA Kit	IF17-4003	Low Risk	C	41420	2020-04-14
ANA Hep-2 IFA Kit	IF17-4004, IF17-4005, IF17-4018	Low Risk	C	17269	2020-04-14
AMA IFA Kit	IF17-4022, IF17-4023	Low Risk	C	17267	2020-04-14
AAS Rat Kidney Stomach Liver Tissue	IF17-4000	Low Risk	C	30274	2020-04-14

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IFA Device Group	Ref. No.	IVDD Risk class	IVDR Risk class	GMDN code	First CE-marking
ASMA IFA Kit	IF17-4006, IF17-4015	Low Risk	C	30274	2020-04-14
ATA IFA Kit	IF17-4030, IF174031	Low Risk	C	30274	2020-04-14
ASA IFA Kit	IF17-4008, IF17-4034	Low Risk	C	30274	2020-04-14
nDNA IFA Kit	IF17-4007, IF17-4051, IF17-4052	Low Risk	C	30274	2020-04-14
Endomysial (Primate Endomysial)	IF17-4032, IF17-4033	Low Risk	C	12109016	2020-04-14
Anti-Reticulin IgA	IF17-4041, IF17-4042	Low Risk	C	30526	2020-04-14
Anti-Reticulin IgG	IF17-4043, IF17-4044	Low Risk	C	30526	2020-04-14
C-ANCA	IF17-4059	Low Risk	C	30484	2020-04-14
P-ANCA	IF17-4060	Low Risk	C	30483	2020-04-14
Bacterial Diseases					
Legionella pneumophila 1-6 IFA Poly (HT)	IF17-4063, IF17-4064	Low Risk	C	30694	2020-04-14
Legionella pneumophila 1-6/bdglmj/C Specimen	IF17-4061	Low Risk	C	30694	2020-04-14
Legionella pneumophila 1-6/bdglmj DFA Screen	IF17-4062	Low Risk	C	30694	2020-04-14
FTA-ABS Double Stain (Syphilis) IFA Kit	IF17-4013, IF17-4066	Low Risk	C	32455	2020-04-14
FTA-ABS (T. pallidum)	IF17-4012, IF17-4067	Low Risk	C	32455	2020-04-14
FTA-ABS (Syphilis) Titrable IFA Kit	IF17-4014	Low Risk	C	32455	2020-04-14
Viral diseases					
HSV-1 IgG IFA Kit	IF17-4016	Low Risk	C	39502	2020-04-14
HSV-2 IgG IFA Kit	IF17-4080	Low Risk	C	39502	2020-04-14
HSV-1 IgM IFA Kit	IF17-4017	Low Risk	C	39502	2020-04-14
HSV-2 IgM IFA Kit	IF17-4081	Low Risk	C	39502	2020-04-14
HSV 1&2 IgG	IF17-4078	Low Risk	C	39502	2020-04-14
HSV 1&2 IgM	IF17-4079	Low Risk	C	39502	2020-04-14
EBV-VCA IgG IFA Kit	IF17-4074	Low Risk	C	33971	2020-04-14
EBV-VCA IgM IFA Kit	IF17-4075	Low Risk	C	33971	2020-04-14
EBV-EA IFA Kit	IF17-4077	Low Risk	C	33971	2020-04-14
EBNA IFA Kit	IF17-4076	Low Risk	C	33971	2020-04-14
RMSF Rocky Mountain Spotted Fever (R. ricketsii)	IF17-4065	Low Risk	C	32473	2020-04-14
Measles IgG IFA Kit	IF17-4092	Low Risk	C	44019	2020-04-14
Measles IgM IFA Kit	IF17-4093	Low Risk	C	44019	2020-04-14
Mumps IgG IFA Kit	IF17-4094	Low Risk	C	33908	2020-04-14
Mumps IgM IFA Kit	IF17-4095	Low Risk	C	33908	2020-04-14
RSV IgG (Respiratory Syncytial Virus)	IF17-4096	Low Risk	C	30814	2020-04-14

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IFA Device Group	Ref. No.	IVDD Risk class	IVDR Risk class	GMDN code	First CE-marking
RSV IgM (Respiratory Syncytial Virus)	IF17-4097	Low Risk	C	30814	2020-04-14
Varicella-Zoster Virus IgG IFA Kit	IF17-4098	Low Risk	C	44027	2020-04-14
Varicella-Zoster Virus IgM IFA Kit	IF17-4099	Low Risk	C	44027	2020-04-14
West Nile Virus IgG	IF17-4100	Low Risk	C	42926	2020-04-14
West Nile Virus IgG	IF17-4101	Low Risk	C	42926	2020-04-14

RT-PCR	Ref. No.	IVDD Risk class	IVDR Risk class	GMDN code	First CE-marking
SARS-CoV-2	PR31-8000	Low Risk	D	42994	2020-04-14
SARS-CoV-2	PR4-8000	Low Risk	D	42994	2020-04-14
SARS-CoV-2 pap-PCR	PR45-8000	Low Risk	D	42994	2020-12-06
SARS-CoV-2/Flu/RSV RT-PCR	PR31-8001	Low Risk	D	42994	2020-12-06

Rapid Tests Device Group	Ref. No.	IVDD Risk class	IVDR Risk class	GMDN code	First CE-marking
Tumor Markers Tests					
FOB Cassette	RT27-2182	Low Risk	C	38217	2020-04-14
FOB Strip	RT27-2181	Low Risk	C	38217	2020-04-14
CEA	RT27-2180	Low Risk	C	30288	2020-04-14
AFP	RT27-2179	Low Risk	C	30295	2020-04-14
Cardiac markers					
CK-MB Cassette (Serum/Plasma/Whole Blood)	RT27-2001	Low Risk	C	30499	2020-04-14
C-Reactive Protein (CRP) Cassette (Serum/Plasma/Whole Blood)	RT27-2003	Low Risk	C	30507	2020-04-14
C-Reactive Protein (CRP) Strip (Serum/Plasma/Whole Blood)	RT27-2002	Low Risk	C	30507	2020-04-14
D-Dimer Cassette (Plasma/Whole Blood)	RT27-2004	Low Risk	C	30576	2020-04-14
Myoglobin Cassette (Serum/Plasma/Whole Blood)	RT27-2005	Low Risk	C	30264	2020-04-14
Troponin I Cassette (Serum/Plasma/Whole Blood)	RT27-2007	Low Risk	C	30509	2020-04-14
3 in 1 Troponin I/Myoglobin/CKMB Cassette (Serum/Plasma/Whole Blood)	RT27-2006	Low Risk	C	42649	2020-04-14
Drug Test					
Alcohol Urine Strip	RT27-2010	Low Risk	B	30443	2020-04-14
Alcohol Saliva Strip	RT27-2009	Low Risk	B	30443	2020-04-14
Amphetamine Urine Cassette	RT27-2012	Low Risk	C	30516	2020-04-14
Amphetamine Urine Strip	RT27-2011	Low Risk	C	30516	2020-04-14
Barbiturates Urine Cassette	RT27-2014	Low Risk	C	30517	2020-04-14
Barbiturates Urine Strip	RT27-2013	Low Risk	C	30517	2020-04-14
Buprenorphine Urine Cassette	RT27-2016	Low Risk	C	31584	2020-04-14
Buprenorphine Urine Strip	RT27-2015	Low Risk	C	31584	2020-04-14
Benzodiazepine Urine Cassette	RT27-2018	Low Risk	C	30518	2020-04-14
Benzodiazepine Urine Strip	RT27-2017	Low Risk	C	30518	2020-04-14
Cocaine Urine Cassette	RT27-2022	Low Risk	C	30520	2020-04-14
Cocaine Urine Strip	RT27-2021	Low Risk	C	30520	2020-04-14

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Rapid Tests Device Group	Ref. No.	IVDD Risk class	IVDR Risk class	GMDN code	First CE-marking
Cotinine Cassette	RT27-2024	Low Risk	C	37270	2020-04-14
Cotinine Strip	RT27-2023	Low Risk	C	37270	2020-04-14
EDDP Urine Cassette	RT27-2028	Low Risk	C	30521	2020-04-14
EDDP Urine Strip	RT27-2027	Low Risk	C	30521	2020-04-14
Fentanyl Urine Cassette	RT27-2030	Low Risk	C	31582	2020-04-14
Fentanyl Urine Strip	RT27-2029	Low Risk	C	31582	2020-04-14
Ketamine Urine Cassette	RT27-2032	Low Risk	C	31582	2020-04-14
Ketamine Urine Strip	RT27-2031	Low Risk	C	31582	2020-04-14
MDMA(Ecstasy) Cassette	RT27-2038	Low Risk	C	30423	2020-04-14
MDMA(Ecstasy) Strip	RT27-2037	Low Risk	C	30423	2020-04-14
Methadone (MTD) Urine Urine Cassette	RT27-2040	Low Risk	C	30521	2020-04-14
Methadone (MTD) Urine Urine Strip	RT27-2039	Low Risk	C	30521	2020-04-14
Methamphetamine Urine Cassette	RT27-2042	Low Risk	C	30423	2020-04-14
Methamphetamine Urine Strip	RT27-2041	Low Risk	C	30423	2020-04-14
Marijuana (THC) Urine Cassette	RT27-2057	Low Risk	C	30519	2020-04-14
Marijuana (THC) Urine Strip	RT27-2056	Low Risk	C	30519	2020-04-14
Opiates Urine Cassette	RT27-2044	Low Risk	C	30522	2020-04-14
Opiates Urine Strip	RT27-2043	Low Risk	C	30522	2020-04-14
Oxycodone Urine Cassette	RT27-2047	Low Risk	C	31584	2020-04-14
Oxycodone Urine Strip	RT27-2046	Low Risk	C	31584	2020-04-14
Phencyclidine (PCP) Urine Cassette	RT27-2049	Low Risk	C	30523	2020-04-14
Phencyclidine (PCP) Urine Strip	RT27-2048	Low Risk	C	30435	2020-04-14
Tricyclic Antidepressants (TCA) Cassette	RT27-2055	Low Risk	C	30524	2020-04-14
Tricyclic Antidepressants (TCA) Strip	RT27-2054	Low Risk	C	30523	2020-04-14
Tramadol Urine Cassette	RT27-2059	Low Risk	C	31582	2020-04-14
Tramadol Urine Strip	RT27-2058	Low Risk	C	31582	2020-04-14
2-Drug Cassette (Any Combination)	RT27-2060	Low Risk	C	30261	2020-04-14
3-Drug Cassette (Any Combination)	RT27-2061	Low Risk	C	30261	2020-04-14
4-Drug Cassette (Any Combination)	RT27-2062	Low Risk	C	30261	2020-04-14
5-Drug Cassette (Any Combination)	RT27-2063	Low Risk	C	30261	2020-04-14
6-Drug Cassette (Any Combination)	RT27-2064	Low Risk	C	30261	2020-04-14
7-Drug Cassette (Any Combination)	RT27-2065	Low Risk	C	30261	2020-04-14
8-Drug Cassette (Any Combination)	RT27-2066	Low Risk	C	30261	2020-04-14
9-Drug Cassette (Any Combination)	RT27-2067	Low Risk	C	30261	2020-04-14
10-Drug Cassette (Any Combination)	RT27-2068	Low Risk	C	30261	2020-04-14
11-Drug Cassette (Any Combination)	RT27-2069	Low Risk	C	30261	2020-04-14
12-Drug Cassette (Any Combination)	RT27-2070	Low Risk	C	30261	2020-04-14
2-Drug Strip (Any Combination)	RT27-2071	Low Risk	C	30261	2020-04-14
3-Drug Strip (Any Combination)	RT27-2072	Low Risk	C	30261	2020-04-14
4-Drug Strip (Any Combination)	RT27-2073	Low Risk	C	30261	2020-04-14
5-Drug Strip (Any Combination)	RT27-2074	Low Risk	C	30261	2020-04-14
6-Drug Strip (Any Combination)	RT27-2075	Low Risk	C	30261	2020-04-14
7-Drug Strip (Any Combination)	RT27-2076	Low Risk	C	30261	2020-04-14
8-Drug Strip (Any Combination)	RT27-2077	Low Risk	C	30261	2020-04-14
9-Drug Strip (Any Combination)	RT27-2078	Low Risk	C	30261	2020-04-14
10-Drug Strip (Any Combination)	RT27-2079	Low Risk	C	30261	2020-04-14

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Rapid Tests Device Group	Ref. No.	IVDD Risk class	IVDR Risk class	GMDN code	First CE-marking
11-Drug Strip (Any Combination)	RT27-2080	Low Risk	C	30261	2020-04-14
12-Drug Strip (Any Combination)	RT27-2081	Low Risk	C	30261	2020-04-14
Drug Test/Cup					
2-Drug Cup (Any Combination)	RT27-2082	Low Risk	C	30261	2020-04-14
3-Drug Cup (Any Combination)	RT27-2083	Low Risk	C	30261	2020-04-14
4-Drug Cup (Any Combination)	RT27-2084	Low Risk	C	30261	2020-04-14
5-Drug Cup (Any Combination)	RT27-2085	Low Risk	C	30261	2020-04-14
6-Drug Cup (Any Combination)	RT27-2086	Low Risk	C	30261	2020-04-14
7-Drug Cup (Any Combination)	RT27-2087	Low Risk	C	30261	2020-04-14
8-Drug Cup (Any Combination)	RT27-2088	Low Risk	C	30261	2020-04-14
9-Drug Cup (Any Combination)	RT27-2089	Low Risk	C	30261	2020-04-14
10-Drug Cup (Any Combination)	RT27-2090	Low Risk	C	30261	2020-04-14
11-Drug Cup (Any Combination)	RT27-2091	Low Risk	C	30261	2020-04-14
12-Drug Cup (Any Combination)	RT27-2092	Low Risk	C	30261	2020-04-14
Infectious Diseases and others					
Legionella Urinary Antigen Cassette	RT27-2147	Low Risk	C	30692	2020-04-14
Legionella Urinary Antigen Strip	RT27-2146	Low Risk	C	30692	2020-04-14
Adeno/Rotavirus Antigen Cassette	RT27-2131	Low Risk	C	42994	2020-04-14
Adeno Antigen Cassette	RT27-2132	Low Risk	C	42994	2020-04-14
Rotavirus Antigen Cassette	RT27-2161	Low Risk	C	30815	2020-04-14
Chagas Cassette	RT27-2133	Low Risk	C	30820	2020-04-14
Chikungunya IgG/IgM Cassette	RT27-2135	Low Risk	C	42994	2020-04-14
Gonorrhoea Cassette	RT27-2140	Low Risk	C	38851	2020-04-14
Influenza A&B Cassette	RT27-2145	Low Risk	C	39466	2020-04-14
Leishmania IgG/IgM Cassette	RT27-2149	Low Risk	C	30823	2020-04-14
Leishmania Cutaneous Strip	RT27-2148	Low Risk	C	30823	2020-04-14
Leptospira IgG/IgM	RT27-2150	Low Risk	C	30716	2020-04-14
Syphilis Cassette	RT27-2172	Low Risk	C	30687	2020-04-14
Syphilis Strip	RT27-2173, RT24-2173	Low Risk	C	30687	2020-04-14
Mononucleosis Cassette (Mono) (S/P)	RT27-2177	Low Risk	C	30826	2020-04-14
Strep A Cassette	RT27-2169	Low Risk	C	30826	2020-04-14
Strep A Strip	RT27-2168	Low Risk	C	30826	2020-04-14
Strep B Cassette	RT27-2171	Low Risk	C	30827	2020-04-14
Strep B Strip	RT27-2170	Low Risk	C	30827	2020-04-14
H1N1 Strip	RT40-2209	Low Risk	C	39461	2020-04-14
H. Pylori Ab Cassette (Serum/Plasma)	RT27-2141	Low Risk	B	30825	2020-04-14
H. Pylori Ab Cassette (Serum/Plasma/Whole Blood)	RT27-2142, RT24-2142	Low Risk	B	30825	2020-04-14
H. Pylori Antigen Cassette	RT27-2143, RT24-2203	Low Risk	B	30689	2020-04-14
HAV IgM	RT27-2108	Low Risk	C	30720	2020-04-14
Dengue IgG&IgM	RT27-2138, RT24-2197	Low Risk	C	42994	2020-04-14
Dengue NS1	RT24-2139	Low Risk	C	42994	2020-04-14
Dengue IgG/IgM/NS1	RT24-2208	Low Risk	C	42994	2020-04-14

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Rapid Tests Device Group	Ref. No.	IVDD Risk class	IVDR Risk class	GMDN code	First CE-marking
Malaria P.f./Pv	RT24-2204	Low Risk	C	30674	2020-04-14
Malaria Pan	RT24-2206	Low Risk	C	30674	2020-04-14
Malaria P.f./Pan	RT24-2205, RT27-2154	Low Risk	C	30674	2020-04-14
Malaria P.f. Cassette	RT24-2207, RT27-2151	Low Risk	C	30674	2020-04-14
Malaria P.f. Strip	RT27-2152	Low Risk	C	30674	2020-04-14
Malaria P.f./vivax	RT27-2153	Low Risk	C	30674	2020-04-14
Norovirus	RT27-2156	Low Risk	C	32459	2020-04-14
Salmonella typhi Antigen Cassette	RT27-2163	Low Risk	C	30709	2020-04-14
Salmonella typhi IgG/IgM Cassette	RT27-2164	Low Risk	C	30709	2020-04-14
Salmonella typhi/paratyphi antigen	RT27-2165	Low Risk	C	30709	2020-04-14
Scrub typhus IgG Strip	RT4-2166	Low Risk	C	30717	2020-04-14
Scrub typhus IgM Strip	RT4-2167	Low Risk	C	30717	2020-04-14
Zika Virus IgG/IgM Cassette	RT27-2178	Low Risk	C	42994	2020-04-14
COVID-19 IgG/IgM	RT24-2198, RT28-2198, RT45-2198	Low Risk	D	44022	2020-04-14
SARS-CoV2 Antigen Rapid Test	RT45-2214	Low Risk	D	44022	2020-08-24
Tuberculosis (TB) Cassette	RT27-2175	Low Risk	C	44020	2020-04-14
Tuberculosis (TB) Strip	RT27-2174	Low Risk	C	44020	2020-04-14
HEV IgG/IgM	RT27-2119	Low Risk	D	30756	2020-04-14
Cryptococcus Ag	RT27-2137	Low Risk	C	37746	2020-04-14
Hantavirus IgG/IgM	RT27-2144	Low Risk	C	15048014	2020-04-14
Mycoplasma pneumoniae Ag	RT27-2155	Low Risk	C	17311	2020-04-14
Rickettsia IgG/IgM	RT24-2160	Low Risk	C	30717	2020-04-14
RSV	RT27-2162	Low Risk	C	30814	2020-04-14
Tetanus	RT27-2176	Low Risk	C	38876	2020-04-14
Fertility					
FSH Urine Cassette	RT27-2094	Low Risk	B	30512	2020-04-14
FSH Urine Strip	RT27-2093	Low Risk	B	30512	2020-04-14
Ovulation					
LH Urine Cassette	RT27-2106	Low Risk	B	30515	2020-04-14
LH Urine Strip	RT27-2105	Low Risk	B	30515	2020-04-14
Pregnancy					
hCG 10 mIU/ml Midstream	RT27-2099	Low Risk	B	30513	2020-04-14
hCG 20 mIU/ml Midstream	RT27-2102	Low Risk	B	30513	2020-04-14
hCG 10mIU/ml urine Cassette	RT27-2095	Low Risk	B	30513	2020-04-14
hCG 10mIU/ml urine Strip	RT27-2097	Low Risk	B	30513	2020-04-14
hCG 10mIU/ml urine/serum	RT27-2098	Low Risk	B	30513	2020-04-14
hCG 20 mIU/ml urine Cassette	RT27-2101	Low Risk	B	30513	2020-04-14
hCG 20 mIU/ml urine Strip	RT27-2100	Low Risk	B	30513	2020-04-14
hCG 10mIU/ml urine/serum/p	RT27-2096	Low Risk	B	30513	2020-04-14
hCG 20 mIU/ml urine/serum/p Cassette	RT27-2104	Low Risk	B	30513	2020-04-14
hCG 20 mIU/ml urine/serum/p Strip	RT27-2103	Low Risk	B	30513	2020-04-14
Others					

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Micro-Albumin (HAS) Strip	RT27-2197	Low Risk	C	30246	2020-04-14
Ferritin	RT27-2196	Low Risk	C	30377	2020-04-14
H-FABP	RT27-2107	Low Risk	C	1230190	2020-04-14
Nt-proBNP	RT27-1157	Low Risk	C	12130190	2020-04-14
Procalcitonin (S/P/WB)	RT27-2158	Low Risk	C	12069016	2020-04-14
Procalcitonin (S/P)	RT27-2159	Low Risk	C	12069016	2020-04-14
Urine Reagent Strips					
URS-1G	RT27-2185	Low Risk	B	17419	2020-04-14
URS-2PK	RT27-2186	Low Risk	B	30226	2020-04-14
URS-3 GKpH	RT27-2187	Low Risk	B	30226	2020-04-14
URS-4 GKpHB	RT27-2188	Low Risk	B	30226	2020-04-14
URS-5GKpHBP	RT27-2189	Low Risk	B	30226	2020-04-14
URS-6GKpHBPBili	RT27-2190	Low Risk	B	30226	2020-04-14
URS-7GKpHBPBiliU	RT27-2191	Low Risk	B	30226	2020-04-14
URS-8GKpHBPBiliUN	RT27-2192	Low Risk	B	30226	2020-04-14
URS-9GKpHBPBiliUNS	RT27-2193	Low Risk	B	30226	2020-04-14
URS-10GKpHBPBiliUNSL	RT27-2194	Low Risk	B	30226	2020-04-14
URS-11	RT27-2195	Low Risk	B	30226	2020-04-14

Serology Device Group	Ref. No.	IVDD Risk class	IVDR Risk class	GMDN code	First CE-marking
C- Reactive Protein (CRP)	SL25-3002, SL25-3003	Low Risk	C	30499	2020-04-14
RF	SL25-3008, SL25-3009	Low Risk	C	30500	2020-04-14
Anti- Streptolysin O(ASO)	SL25-3000, SL25-3001	Low Risk	C	30495	2020-04-14
Infectious Mononucleosis Screening (Mono)	SL25-3004, SL25-3005	Low Risk	C	30810	2020-04-14
RPR	SL25-3011, SL25-3012	Low Risk	C	17393	2020-04-14
Lupus Erythematosus (SLE)	SL25-3007	Low Risk	C	30487	2020-04-14
TPHA	SL25-3016	Low Risk	C	32453	2020-04-14
Rotavirus	SL25-3010	Low Risk	C	17381	2020-04-14
S. Aureus	SL25-3013	Low Risk	C	33887	2020-04-14
Streptococci Lancefield grouping	SL25-3015	Low Risk	C	17389	2020-04-14
VDRL Antigen	SL25-3017	Low Risk	C	17395	2020-04-14
PARATYPHOID A (Salmonella, flagellar a antigen)	SL25-3022	Low Risk	C	39453	2020-04-14
PARATYPHOID B (Salmonella, flagellar b antigen)	SL25-3023	Low Risk	C	39453	2020-04-14
PARATYPHOID C (Salmonella typhi, flagellar c antigen)	SL25-3024	Low Risk	C	39453	2020-04-14
SALMONELLA Group A Antigen (somatic antigen)	SL25-3028	Low Risk	C	39453	2020-04-14
SALMONELLA Group B Antigen (somatic antigen)	SL25-3029	Low Risk	C	39453	2020-04-14

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Serology Device Group	Ref. No.	IVDD Risk class	IVDR Risk class	GMDN code	First CE-marking
SALMONELLA Group C Antigen (somatic antigen)	SL25-3030	Low Risk	C	39453	2020-04-14
TYPHOID H (Salmonella typhi, flagellar d antigen)	SL25-3031	Low Risk	C	39453	2020-04-14
TYPHOID O (Salmonella typhi, somatic Group D antigen)	SL25-3032	Low Risk	C	39453	2020-04-14
Brucella Melitensis	SL25-3018	Low Risk	C	39536	2020-04-14
Brucella Abortus	SL25-3019	Low Risk	C	39536	2020-04-14
PROTEUS OX2 (somatic antigen)	SL25-3026	Low Risk	C	39543	2020-04-14
PROTEUS OX19 (somatic antigen)	SL25-3025	Low Risk	C	39543	2020-04-14
PROTEUS OXK (somatic antigen)	SL25-3027	Low Risk	C	39543	2020-04-14

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Certificate of Registration

This is to certify the Quality Management System of:

MONOCENT, INC.
9237 Eton Avenue
Chatsworth, CA 91311

has been assessed and found to be in compliance with the requirements of

ISO 9001:2015

for the following scope:

Manufacturing and Distribution of IVD Products
(Serology, Rapid, ELISA, CLIA, IFA Test Systems and Instrumentation)

IAF Code: 31 & 35

Certificate Number: **SARA-2019-CA-0253-01-A**

Originally Registered:
January 10, 2020

Latest Issue:
December 20, 2022

Certification Cycle:
January 10, 2023 – January 9, 2026

Expiration Date:
January 9, 2026

President, SARA Registrar

MSCB-194

Certificate of Registration

This is to certify the Quality Management System of:

MONOCENT, INC.
9237 Eton Avenue
Chatsworth, CA 91311

has been assessed and found to be in compliance with the requirements of

ISO 13485:2016

for the following scope:

Manufacturing and Distribution of IVD Products
(Serology, Rapid, ELISA, CLIA, IFA Test Systems and Instrumentation)

ISO 13485:2016

Medical Device Code: In Vitro Dianostics (IVD) & Non-active Medical Device

Certificate Number: **SARA-2019-CA-0253-02-A**

Originally Registered:
January 10, 2020

Latest Issue:
December 20, 2022

Certification Cycle:
January 10, 2023 – January 9, 2026

Expiration Date:
January 9, 2026

President, SARA Registrar

MSCB-194

This registration is subject to the company maintaining its system to the required standard which will be monitored annually by SARA Registrar.
This certificate remains the property of Standards American Registrations Authority (SARA Registrar) and shall be returned immediately upon request.
SARA Registrar Headquarter Mailing: 1807H Santa Rita Road, #175, Pleasanton, CA 94566

MONOCENT
Innovation & Excellence

ENGLISH

HDV Ab
ELISA TEST SYSTEM

REF **EL13-1428** Σ **96 TESTS** RUO

INTENDED USE

The Monocent, Inc.'s HDV Ab is "in vitro" diagnostic kit for the detection of total antibodies to Hepatitis Delta Virus in human serum or plasma samples. The assay is intended for investigate immunological response to HDV during acute and chronic delta hepatitis.

SUMMARY AND EXPLANATION

The Hepatitis Delta Virus (HDV) is a defective virus classified within the floating genus of Deltavirus (1). It requires Hepatitis B Virus (helper virus) for its expression and replication (2). HDV is a 36 nm spherical particle enveloped by hepatitis B virus surface antigen, containing in its interior a nucleocapsid of 19 nm in diameter (3,4) which consists of a RNA molecule and a single structural protein, the hepatitis delta antigen (HDAg).
The HDV genome is a circular single stranded RNA 1679 nucleotides long with extensive intra-molecular complementary sequences (70%) that confers an unbranched rod-like configuration similarly to that of viroid and some plant virusoid RNAs (5,6).
Post-transcriptional HDV-RNA editing results in the production of two different forms of the delta antigen phosphoprotein: S-HDAg (195 a.a.) which is necessary for HDV replication and L-HDAg (214 a.a.) which is necessary for the assembly and release of HDV containing particles (7,8).
Infection with HDV has a worldwide distribution. It is endemic in the developing world, with a high prevalence in South America (9). The HDV, like to HBV, is acquired parenterally by exposure to blood, through sexual contacts (10) as well as among family members with a trend to form clusters (11).
According to the obligatory dependence of HDV on HBV, the modes of acquiring HDV infection are essentially two: simultaneous coinfection with HBV or superinfection of an HBsAg carrier subject (12). Persons with anti-HBs antibody, being immune to HBV, are not susceptible to HDV infection.
The acute hepatitis D acquired by coinfection with HBV, in most cases, appears as a typical acute self-limited hepatitis that is clinically and histologically indistinguishable from the hepatitis B. The outcome is a complete recovery, as typically observed in acute type-B hepatitis, and in only 2% of cases it may progress to chronicity. Diagnosis is made on the concomitant appearance of primary markers of infection with HBV and HDV (12).
In the superinfection, the pre-existing HBV provides the biological substrate for the full expression of the virulence of
HDV with progression of disease to a severe acute hepatitis that may run to a fulminant course.
The diagnosis of HDV infection may carried out detecting in the serum the delta antigen (HDVAg) after disassembly of 36 nm particles and detecting antibodies against HDVAg (anti-HDV) of IgG and IgM classes.
Testing for IgM anti-HDV has been important, not only as a marker of primary HDV infection, but also for its clinical relevance in the natural history of the disease (13).
Chronic hepatitis D is associated with high titers of both IgG and IgM anti-HDV: the IgM are monomeric (7S) and not pentameric (19S) as in primary infection (14).
The decrease and disappearance of IgM anti-HDV predicts impending resolution of chronic disease, either spontaneous or induced by pharmacological treatment (15).

PRINCIPLE OF THE TEST

Anti-HDV antibodies, if present in the sample, compete with a polyclonal anti-HDV antibody, labelled with peroxidase (HRP) for a fixed amount of recombinant delta antigen, coated on the solid phase.
In the 1st incubation anti-HDV antibodies, competing with polyclonal anti-HDV antibodies labelled with HRP, bind to affinity-purified HDV antigen adsorbed on the well surface.
The concentration of the bound enzyme on the solid phase becomes inversely proportional to the amount of anti-HDV antibodies in the sample and its activity is detected by adding the Chromogen/Substrate solution in the 2nd incubation.
The concentration of HDV antibodies in the sample is determined by means of a Cut-off value that allows for the discrimination between positive and negative samples.

MATERIALS AND COMPONENTS PROVIDED

- ***Strip Microplate-*** Microplate of 8 x 12 strips of breakable wells activated with not infective recombinant HDV antigen.
  The microplates are sealed in an aluminium pouch in presence of desiccant bag.
  no. of microplates 1
- ***Positive Control*** - *Ready to use* Human serum base reactive for anti-HDV. It contains 0.02% gentamicin sulphate, 0.09 % Kathon as preservatives.
  Volume 0.6 ml
- ***Negative Control*** - *Ready to use.* Buffered solution not reactive for anti-HDV that contains 0.02% gentamicin sulphate, 0.09 % Kathon as preservatives.
  Volume 1.0 ml
- ***Washing Solution*** – *To dilute before use*. Solution 25x concentrated that contains Imidazole buffer and surface-active agent.
  Volume 50.0 ml
- ***Conjugate*** – *To dilute before use.* Solution of proteic buffer, 20x concentrated, that contains polyclonal anti-HDV antibodies, labelled with HRP, proteic stabilizers, 0.02% gentamicin sulphate and 0.09% Kathon as preservatives.
  Volume 0.4 ml
- ***Conjugate Diluent*** – Buffered proteic solution, for the dilution of the concentrated Conjugate that contains proteic stabilizers, 0.02% gentamicin sulphate and 0.09 % Kathon as preservatives. It contains Ponceau red as colouring agent.
  Volume 8.0 ml
- ***TMB*** – *To mix with Substrate.* Solution of 3,3',5,5' tetramethylbenzidine (TMB), activators and stabilizers, in a phosphate/citrate buffer.
  Note: Store protected from light.
  Volume 7.0 ml
- ***Substrate*** – *To mix with Chromogen.* Solution that contains hydrogen peroxide (H_2O_2), activators and stabilizers, in a phosphate/citrate buffer.
  Volume 7.0 ml
- ***Stop Solution*** – Solution of 0.3 M sulphuric acid.
  Note: handle with care.
  Volume 10.0 ml
- ***Cardboard Sealer*** - Plastic transparent sealer to cover microplates during the incubation at 37 °C.
  no. of sealers 2
- ***Package insert*** – The present document.
- ***Symbol information sheet*** – List of the symbols.

Note - All the materials of human origin have been controlled and certified by the supplier to be negative for HBsAg, HCV Ab and HIV1-2 Ab.

MATERIALS REQUIRED BUT NOT PROVIDED

- Micropipettes of 20, 100, 300 and 1000 µl with disposable tips.
- Vortex mixer and adsorbent papers.
- Distilled water.
- Timer.
- Incubator set at 37 ± 1 °C (dry or moist heat).
- Automatic or manual microplate washer able to aspirate and dispense volumes of 300 - 400 µl.
- Photometric microplate reader linear up to at least 2 OD and supplied with filters of 450 nm and 620 - 630 nm.

SHELF LIFE OF THE KIT

The shelf-life of the kit is 15 months from the production date. The validity of the shelf-life is intended for a product stored according to the instructions. The expiration date is indicated on the external label of the package.
Note – Do not use the product after the expiration date.

STORAGE CONDITIONS

- The kit must be stored at 2-8°C and used before the expire date declared on the external label.
- The pouch containing the microplate has to be brought to room temperature before opening. Take out from the frame only the strips necessary for the test programmed and store the remaining strips in the same pouch in presence of the desiccant bag. Close hermetically the pouch and store again at 2-8°C. If stored properly, strips are stable for 2 months from opening.
- The diluted Washing solution, at room temperature, is stable for 1 week.
- The Chromogen/Substrate are stable until the expiration of the kit.
- The other reagents can be used every time, if stored at 2-8°C and handled carefully for avoiding contamination.

PRECAUTIONS

1. All the reagents contained in the kit are for in vitro diagnostic use only.
2. Do not use the kit or reagents after the expiration date stated on labels.
3. Do not mix reagents of different lots.
4. Procedures should be performed carefully in order to obtain reliable results and clinical interpretations.
5. Bring all the reagents to room temperature for at least 60 minutes, before the test is started.
6. Avoid any contamination of reagents when taking them out of vials. We recommend to use automatic pipettes and disposable tips. When dispensing reagents, do not touch the wall of microplate wells with tips, in order to avoid any cross-contamination.
7. In the washing procedure, use only the Washing Solution provided with the kit and follows carefully the indications reported in the "*Washing Instructions*" section of this insert.
8. Ensure that the Chromogen/Substrate does not come in contact with oxidizing agents or metallic surfaces; avoid any intense light exposure during the incubation step or the reagent preparation.
9. Put the reagents in a glass or plastic disposable container, washed with sulfuric acid 1N, then with deionized water, before use.
10. Samples and materials potentially infective have to be handled with care as they could transmit infection.
    All objects come in direct contact with samples and all residuals of the assay should be treated or wasted as potentially infective. Best procedures for inactivation are treatments with autoclave at 121 °C for 30 minutes or with sodium hypochlorite at a final concentration of 2.5 % for 30 minutes. This last method can be used for the treatment of the liquid waste after that it has been neutralized with NaOH.
11. Avoid any contact of liquids with skin and mucous membrane. Use always protective talk-free gloves, glasses and laboratory coats, according to the safety regulations.
12. Some reagents of the kit contain sodium azide which may be toxic if ingested. Sodium azide may react with copper and lead piping to form highly explosive salts. On disposal, flush with large quantities of water.
13. At least 1 hour before use bring all the reagents necessary to the test to room temperature and mix carefully the liquid reagents supplied on vortex (in particular the Controls, the Conjugate and the Chromogen/Substrate) avoiding foaming. Take out from the frame only the strips necessary for the test programmed and store the remaining strips in the same pouch in presence of the desiccant bag.
14. Distribution and incubation times should be the same for all the wells; avoid long interruptions among the different steps of the assay.
15. It is suggested to eliminate the excess of washing solution from wells by blotting them gently on a paper adsorbent pad.
16. The color developed in the last incubation is stable for maximum 1 hour in the dark.
17. We recommend reading the microplate at 450 nm (reading filter) and subtracting the blank at 620 - 630 nm (blanking filter). Blank the reader on A1 well.

SPECIMEN COLLECTION

Either fresh sera or plasma c) can be used for the assay. If not used immediately, they can be stored at 2 - 8 °C for 1 week. In case of longer storage freeze them at – 20 ° C. Samples should be clear. If the samples are turbid, could be contaminated by micro-organism, insofar it recommends to centrifuge them at 2000 rpm x 20 minutes at room temperature or filtrate on 0.22 µm filters.
The samples that, after the above said procedure, did not became clear, cannot be used.

REAGENT PREPARATION

- ***Washing Solution*** - The concentrated solution to be diluted 25x with distilled water before use.
- ***Chromogen/Substrate*** - About 5 minutes before use, mix 1 volume of Chromogen with 1 volume of Substrate, in a disposable plastic container, according to needs. *This solution is stable for 4 hours at room temperature protected from light.*
- ***Conjugate*** - Dilute the concentrated Conjugate 1:20 with the Conjugate Diluent. Mix on vortex before use. *The diluted Conjugate is stable for 1 week at 2-8°C, when stored in a sterile disposable container.*

WASHING INSTRUCTION

A good washing procedure is essential to get correct and reliable analytical results.
In case of manual washing, it is suggested to carry out 5 cycles, first dispensing and then aspirating 300 µl/well per cycle.
Usually 5 cycles of automatic washing of 300 µl/well per cycle are sufficient to remove false positives and high background values. It is suggested to use an Elisa automatic microplate washer, qualified and properly serviced. Anyhow, we recommend calibrating the washing system on the kit itself so to match the declared analytical performances.
Any case, potentially infective wastes from microplate washing have to be inactivated with Na-hypochlorite at 2.5% final concentration for 30 minutes. All these materials must be discarded according to the law as potentially infective wastes.

TEST PROCEDURE

At least 1 hour before use bring all the reagents necessary to the test to room temperature and mix carefully the liquid reagents supplied on vortex (in particular the Controls, the Conjugate and the Chromogen/Substrate) avoiding foaming.

1. Leave the A1 well empty for blanking operations. Dispense 50 µl of Controls and samples in the proper wells necessary for the assay, according to the following scheme:

Position	***Controls/Samples***
A1	Blank
B1+C1	50 µl of Negative Control
D1+E1	50 µl of Positive Control
F1…..H12	50 µl of Samples

Then dispense 50 µl of diluted conjugate in all wells but Blank (A1).

2. Incubate the microplate sealed for 75 minutes at 37 °C.
3. Peel out the plate sealer and wash the microplate according to instructions. In the meantime, prepare the Chromogen/Substrate solution.
4. Add 100 µl of the Chromogen/Substrate solution to all the wells, A1 included. Incubate the microplate for 15 minutes at room temperature, protected from light.
5. Stop the enzymatic reaction by adding 100 µl of Stop Solution to all the wells, A1 included.
6. Read the microplate at 450 nm and 620 – 630 nm blanking the instrument on A1 well.

Note - Read the microplate within 30 minutes from blocking

ASSAY SCHEME

At least 1 hour before use bring all the reagents necessary to the test to room temperature and mix carefully the liquid reagents supplied on vortex (in particular the Controls, the Conjugate and the Chromogen/Substrate) avoiding foaming.

Position	***Controls/Samples***
A1	Blank
B1+C1	Negative Control
D1+E1	Positive Control
F1...H12	Samples

Reagents	***Blank (A1)***	***Controls***	***Samples***
Controls	-	**50 µl**	-
Samples	-	-	**50 µl**
Conjugate	-	**50 µl**	**50 µl**
Cover with the sealer and incubate for 75 minutes at 37 °C			
Peel out the sealer and wash 5 cycles with 300 µl/well per cycle.			
Chromogen/Substrate	**100 µl**	**100 µl**	**100 µl**
Incubate for 15 minutes at room temperature in the dark			
Stop Solution	**100 µl**	**100 µl**	**100 µl**
Blank the reader on A1 well. Read at 620 – 630 nm for measuring the microplate background, then at 450 nm.			
Note - Read the microplate within 30 minutes after the dispensing of the Stop Solution.			

CALCULATION OF RESULTS

If the test turns out to be valid, calculate the Cut-off value through the following formula:

Cut-off = (NC mean + PC mean) / 4

Example of calculation

Negative Control mean	OD 450 nm	1.900	
Positive Control mean	OD 450 nm		0.100
Cut-off = (NC+PC)/4 =	0.500		
Sample n. 1	OD 450 nm = 1.680	negative	
Sample n. 2	OD 450 nm = 0.158	positive	

Samples with an OD value higher than the Cut-off are classified as negative for anti-HDV.
Samples with an OD value lower than the Cut-off are classified as positive for anti-HDV.

VALIDITY OF THE ASSAY

The assay is considered valid if:
1. The OD value of the A1 blank well is < 0.100. Higher values are index of Chromogen/Substrate contamination.
2. The OD mean value of the Negative Control (NC) is > 0.800. Lower values can be result when the storage temperature was not optimal or with a not correct operative procedure.
3. The OD mean value of the Positive Control (PC) is < NC/7. Abnormal values may be observed when the washing instrument does not work correctly or the washing procedure has not been adapted to the assay as described in the proper section.

In case data above do not match the correct values, before repeating the test check carefully the expiration date of the kit, the performances of the instruments used for the assay and the procedure of distribution of controls and samples.

PERFORMANCE CHARACTERISTICS

The studies were performed in Italy at laboratories of Hospital's Blood Banks as well at Universities and Hospital microbiological laboratories. Additional tests were carried out at Monocent, Inc.
All the tests were performed on human sera or plasma; the sensitivity and the specificity were evaluated in comparison with a licensed reference test.

1. **Diagnostic sensitivity -** The clinical sensitivity was assessed examining sera samples collected from 173 patients with acute or chronic hepatitis, anti-HDV positive with two reference kits. All samples examined, except one, were anti-HDV positive with a sensitivity of 99.4%.

2. **Specificity** – The specificity was 100% testing 200 samples from unselected blood donors and 414 samples from hospitalised patients anti-HDV negative with two licensed reference kits.

A total of 90 potentially cross-reactive samples including IgM anti-toxoplasma, IgM anti-rubella, IgM anti-CMV positive samples, samples from multiparous females, autoimmune patients, lipemic, haemolytic and icteric samples, and subjects RF positive have been examined. All samples were negative with HDV Ab kit (specificity 100%).

Specimen	No. examined	False positive	Specificity
Blood donors sera	**200**	**0**	**100 %**
Hospitalised patients sera	**414**	**0**	**100 %**
Potentially cross-reactive sera	**90**	**0**	**100 %**

3. **Reproducibility** – Replicates of anti-HDV negative, low positive and high positive sera samples have been examined with the same HDV IgG lot and with multiple kit lots on multiple days. The results within and between assays are reported in the table.

Specimen	No. replicates	Intra-assay	
		SD	CV%
Negative	**36**	**0.152**	**7.3**
Low +	**24**	**0.035**	**12.1**
High +	**36**	**0.014**	**13.7**

Specimen	No. replicates	Inter-assay	
		SD	CV%
Negative	**7**	**0.125**	**6.4**
Low +	**7**	**0.068**	**15.6**
High +	**7**	**0.020**	**12.8**

LIMITATION OF THE PROCEDURE

Highly lipemic, icteric, hemolysed samples or repeatedly defrost samples and therefore subject to contamination, should not be used as they can give false results in the assay.

PROCEDURE AUTOMATION

This procedure can be used with an automatic device under customer's responsibility and providing he validates the results with an adequate method. For more information, please contact the automatic device manufacturer.

PRECAUTIONS IN USE

The use of the laboratory reagents according to Good Laboratory Practice (GLP) is recommended.

WASTE MANAGEMENT

Please, refer to local legal requirements.

REFERENCES

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Manufactured by
Monocent, Inc.
9237 Eton Ave. Chatsworth, CA 91311, USA
Info@monocent.com | Tel: 424-310-0777
www.monocent.com

Revision Date: 2019-10-12

SYNTESYS

ISO9011:2008
Cert. N.6574/0

SYNTESYS S.A.S. DI RINALDO R. & C.
VIA G. GALILEI, 10/3
35037 Z.I. SELVE DI TEOLO (PD)
TEL. +39 049 9903866 R.A. FAX +39 049 9903867
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DICHIARAZIONE DI CONFORMITA'
Conformity declaration

CE

Il sottoscritto, Rinaldo Ruggero legale rappresentante della ditta:
The undersigned, Rinaldo Ruggero legal representative of the company:

produttore/*manufacturer*

SYNTESYS S.a.s. di Rinaldo R. & C.

indirizzo/*address*

Via G. Galilei, 10/3 35037 Zona Industriale SELVE DI TEOLO (PADOVA) ITALY

O rappresentante il mandatario autorizzato entro la Unione Europea
or representing the authorized mandatary within the European Community

Mandatario autorizzato/*authorized mandatary*

indirizzo/*address*

Dichiara sotto la propria responsabilità che il prodotto/*declares under his own responsability that the product:*

Denominazione/*Description*	**Padella per ammalati, urinali uomo e donna, speculum vaginali, tamponcini cotonati, tamponi sterili in provetta, tamponi sterili con terreno Amies e Stuart in provetta/ *Bed pan, Urinal's man and woman, Vaginal speculum, Cotton swab, Sterile swab in test tube, Sterile swab with medium Amies or Stuart in test tube***
Materiale/*Material*	**Polipropilene, Polietilene, Legno/ *Polypropylene, Polyethylene, Wood***

È conforme alle disposizioni della direttiva 93/42/CE e smi, concernente i dispositivi medici ed al Decreto Legislativo di recepimento con D.lgs. del 24/02/1997 n° 46/97 e soddisfa a tutti i requisiti specificati.
Il dispositivo è stato classificato appartenente alla classe I° secondo i criteri stabiliti in base a quanto previsto dall'Art. 9 ed allegato IX della direttiva sopra citata /*It meets the EC Directive 93/42 about Medical Device, specifications established by the Italian law n 46/97, dated 24th February 1997. The device was classified as belonging to the 1st class, according to the specifications of the established by the art.9, IX enclosure of the above mentioned directive.*

Dichiara inoltre che la documentazione tecnica di supporto alla presente dichiarazione di conformità è conservata presso gli uffici dell'azienda e sarà posta alla disposizione di chi la richiede/ *declares that all technical documents attached to this conformity statment are filed in our company and can be consulted by any authorized body on demand.*

Data 07.01.2016
Issued on January 7th 2016

SYNTESYS S.A.S.
Il legale rappresentante
Rinaldo Ruggero

SYNTESYS

ISO9001:2008
Cert. N.6574/0

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DICHIARAZIONE DI CONFORMITA'
Conformity declaration

CE

Il sottoscritto, Rinaldo Ruggero legale rappresentante della ditta:
The undersigned, Rinaldo Ruggero legal representative of the company:

produttore/*manufacturer*

SYNTESYS S.a.s. di Rinaldo Ruggero & C.

indirizzo/*address*

Via G. Galilei, 10/3 35037 Zona Industriale SELVE DI TEOLO (PADOVA) ITALY

O rappresentante il mandatario autorizzato entro la Unione Europea or representing the authorized mandatary within the European Community

Mandatario autorizzato/*authorized mandatary*

indirizzo/*address*

Dichiara sotto la propria responsabilità che il prodotto/*declares under his own responsability that the product:*

Denominazione degli articoli prodotti/*Description of Manufacturer*	**Contenitori per urina, contenitori per feci, contenitori universali, Pipette Pasteur, Piastre di Petri, Anse Sterili per batteriologia, Aste a "L", Puntali Eppendorf gialli e blue, cuvette per spettrofotometro, tazzine per campionamento siero, bacchette per distacco ed estrazione del coagulo, pinzette in polistirolo monouso, provette monouso in plastica, tappi alettati per provette diam. 12 mm e 16mm, provette con granuli ed acceleratore, provette sottovuoto per prelievo, Sistema SEDIPLAST, Microprovette, Portavetrini, Vetrini precolorati, Portaprovette, supporti per microprovette, bottiglie per raccolta urine.** ***Urine container, faeces container, universal container, Pasteur pipette, Petri dishes, Sterile loops, Sterile loops open "L", Eppendorf tips yellow and blue, cuvettes for spectrophotometer, samples cups, Rod to detach clot, disposable forceps, Disposable plastic tubes, winged stoppers for tubes diam. 12mm & 16mm, Test tube with granules and clot activator, vacuum test tube, SEDIPLAST system, micro test tubes, Slides Mailer,"TESTSIMPLETS" slides rack for test tubes, rack for micro test tubes, Bottles for urine collection.***

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Cert. N.6574/0

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Materiale/*Material*	**Polipropilene, Polistirolo, Polietilene e Polimetilmetacrilato** ***Polypropylene, Polystyrene, Polyethylene and Polymetilmetacrylate***

È conforme alle disposizioni della direttiva 98/79/CE concernente i dispositivi medici diagnostici in vitro e recepito in Italia con D.L. del 08/09/2000 n° 332 allegato 1 (requisiti essenziali) ed è fabbricato in accordo ai requisiti di cui all'Allegato III della sopra citata direttiva / *It meets the CE Directive 98/79 CE about in vitro diagnotic device specifications established by the Italian law n. 332, dated 8th September 2000. The device is made according to the specifications of the III attached of the above-mentioned directive.*

Dichiara inoltre che la documentazione tecnica di supporto alla presente dichiarazione di conformità è conservata presso gli uffici dell'azienda e sarà posta alla disposizione di chi la richiede/*declares that all technical documents attached to this conformity statment are filed in our company and can be consulted by any authorized body on demand.*

Data 07/01/2016
Issued on January 7th 2016

SYNTESYS S.a.s.
Il legale rappresentante
Rinaldo Ruggero

SYNTESYS®

Cert. N.7111/3 Cert. N.6574/3

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PEC POSTA@PEC.SYNTESYS.IT

DICHIARAZIONE DI CONFORMITA' UE
EU Declaration of conformity

CE

Il sottoscritto, Rinaldo Ruggero legale rappresentante della ditta:
The undersigned, Rinaldo Ruggero legal representative of the company:

fabbricante/*manufacturer*

SYNTESYS S.r.l.

indirizzo/*address*

Via G. Galilei, 10/3 35037 Zona Industriale SELVE DI TEOLO (PADOVA) ITALY

O rappresentante il mandatario autorizzato entro la Unione Europea
or representing the authorized mandatary within the European Community

Mandatario autorizzato/*authorized mandatary*

indirizzo/*address*

Dichiara sotto la propria responsabilità che il prodotto/*declares under his own responsability that the product:*

Denominazione/*Description*	**Puntali gialli tipo Gilson da 0 a 200 µl / Yellow tips GILSON type 0-200 µl**
Codice/*Code*	**318260**
Lotto/Lot	**4D0912Y** Data di scadenza/Expiry date **09.2025**
Classe di rischio / Risk class	**Classe A** / *Class A*
Numero di registrazione unico (SRN) / Unique registration number (SRN)	**IT-MF-000027856**
UDI-DI di base / Basic UDI-DI	**805414149PUNTALITY**

È conforme secondo il Regolamento (UE) 2017/746 concernente i Dispositivi Medico-Diagnostici in vitro e soddisfa tutti i requisiti specificati. Il dispositivo è stato classificato appartenente alla Classe A secondo la Regola 5 dell' Allegato VIII /
It complies with the Regulation (EU) 2017/746 concerning In Vitro Diagnostic Medical Devices and meets all the specified requirements. The device has been classified as belonging to Class A according to Rule 5 of Annex VIII.

Dichiara inoltre che la documentazione tecnica di supporto alla presente dichiarazione di conformità è conservata presso gli uffici dell'azienda e sarà messa a disposizione delle autorità competenti secondo quanto prescritto dall'Art. 10 punto 7 del Regolamento. / *It also declares that the technical documentation supporting this declaration of conformity is kept at the company offices and will be made available to the competent authorities in accordance with the provisions of Art. 10 point 7 of the Regulations.*

Teolo (PD), 07.10.2022

SYNTESYS S.R.L.
UNIPERSONALE
Il Legale Rappresentante
Rinaldo Ruggero

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Cert. N.7111/2 Cert. N.6574/2

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DICHIARAZIONE DI CONFORMITA' UE
EU Declaration of conformity

CE

Il sottoscritto, Rinaldo Ruggero legale rappresentante della ditta:
The undersigned, Rinaldo Ruggero legal representative of the company:

fabbricante/*manufacturer*

SYNTESYS S.r.l.

indirizzo/*address*

Via G. Galilei, 10/3 35037 Zona Industriale SELVE DI TEOLO (PADOVA) ITALY

O rappresentante il mandatario autorizzato entro la Unione Europea
or representing the authorized mandatary within the European Community

Mandatario autorizzato/*authorized mandatary*

indirizzo/*address*

Dichiara sotto la propria responsabilità che il prodotto/*declares under his own responsability that the product:*

Denominazione/*Description*	**Na Citrato 0,25 ml in pr. 12x86 mm t/rosa (freccia 1.25 ml VES-freccia 2.5 ml COAG.) /** *Sodium citrate 0,25 ml pink stopper 12x86 mm with double level mark for E.S.R. and COAGULATION tube*
Codice/*Code*	**318614**
Lotto/Lot	**208675** Data di scadenza/Expiry date **08.2024**
Classe di rischio / Risk class	**Classe A /** *Class A*
Numero di registrazione unico (SRN) / Unique registration number (SRN)	**IT-MF-000027856**
UDI-DI di base / Basic UDI-DI	**805414149PROVETTEDA**

È conforme secondo il Regolamento (UE) 2017/746 concernente i Dispositivi Medico-Diagnostici in vitro e soddisfa tutti i requisiti specificati. Il dispositivo è stato classificato appartenente alla Classe A secondo la Regola 5 dell' Allegato VIII /
It complies with the Regulation (EU) 2017/746 concerning In Vitro Diagnostic Medical Devices and meets all the specified requirements. The device has been classified as belonging to Class A according to Rule 5 of Annex VIII.

Dichiara inoltre che la documentazione tecnica di supporto alla presente dichiarazione di conformità è conservata presso gli uffici dell'azienda e sarà messa a disposizione delle autorità competenti secondo quanto prescritto dall'Art. 10 punto 7 del Regolamento. / *It also declares that the technical documentation supporting this declaration of conformity is kept at the company offices and will be made available to the competent authorities in accordance with the provisions of Art. 10 point 7 of the Regulations.*

Teolo (PD), 08.09.2022

SYNTESYS S.R.L.
UNIPERSONALE
Il Legale Rappresentante
Rinaldo Ruggero

SYNTESYS

Cert. N.7111/2 Cert. N.6574/2

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AUTHORIZATION LETTER

We, **Syntesys S.R.L.** having a registered office at Via G. Galilei 10/3, 35037 Selve di Teolo - PD - Italy, assign **Sanmedico SRL** having a registered office at A.Corobceanu str., apt. 9, Chişinău MD-2012, Moldova, as authorized representative.

We declare that the company mentioned above is authorized to register, notify, renew or modify the registration of medical devices on the territory of the Republic of Moldova.

This letter is valid till 31.12.2021

Teolo, 05.01.2021

SYNTESYS S.R.L.
UNIPERSONALE
Via G. Galilei, 10/3 - 35037 Z.I. Selve - Teolo (PD)
C.F./P.I./R.I. PD: 03573950288 - Cap. Soc. 20.700,00 €
Tel. 049 9903866 - Fax 049 9903867

Rinaldo Ruggero
CEO and Legal Representative
SYNTESYS S.R.L.

IQNET

Building trust together.

Certificate

CISQ/ICIM S.P.A. has issued an IQNet recognized certificate that the organization:

SYNTESYS S.R.L.

Head Office and Operative Unit

Via G. Galilei, 10/1-2-3 - Zona Industriale - I-35037 Selve di Teolo (PD)

Operative Units

Via G. Galilei, 16/1 - Zona Industriale - I-35037 Selve di Teolo (PD)

Via San Benedetto, 48/A - Zona Industriale - I-35037 Selve di Teolo (PD)
Via G. Galilei, 3 - Zona Industriale - I-35037 Selve di Teolo (PD)

has implemented and maintains a/an

Quality Management System

for the following scope:

Trading of products for laboratory analysis. Manufacturing of products for laboratory analysis and sanitary products. Design and production management of sterile swabs for the collection and the preservation of biological samples, also for surgical application, with or without transport medium.

which fulfils the requirements of the following standard:

ISO 9001:2015

Issued on:	**2022-06-05**
First issued on:	**2013-06-05**
Expires on:	**2025-06-04**

This attestation is directly linked to the IQNet Partner's original certificate and shall not be used as a stand-alone document.

Registration Number: **IT-83562**

Alex Stoichitoiu
President of IQNET

Mario Romersi
President of CISQ

CISQ

IQNET

Building trust together.

Certificate

CISQ/ICIM S.P.A. has issued an IQNet recognized certificate that the organization:

SYNTESYS S.R.L.

Head Office and Operative Unit

Via G. Galilei, 10/1-2-3 - Zona Industriale - I-35037 Selve di Teolo (PD)

Operative Units

Via G. Galilei, 16/1 - Zona Industriale - I-35037 Selve di Teolo (PD)

Via San Benedetto, 48/A - Zona Industriale - I-35037 Selve di Teolo (PD)
Via G. Galilei, 3 - Zona Industriale - I-35037 Selve di Teolo (PD)

has implemented and maintains a/an

Quality Management System

for the following scope:

Trading of products for laboratory analysis. Manufacturing of products for laboratory analysis and sanitary products. Design and production management of sterile swabs for the collection and the preservation of biological samples, also for surgical application, with or without transport medium.

which fulfils the requirements of the following standard:

ISO 13485:2016

Issued on:	**2022-06-05**
First issued on:	**2014-06-21**
Expires on:	**2025-06-04**

This attestation is directly linked to the IQNet Partner's original certificate and shall not be used as a stand-alone document.

Registration Number: **IT-93779**

Alex Stoichitoiu
President of IQNET

Mario Romersi
President of CISQ

CISQ

Annex 1

List of devices produced XEMA Co., Ltd.
registered in German (BfArM-DMIDS) with CE marking

XEMA Co., Ltd.
bld.48/4, 9th Parkovaya str.
Moscow 105264, RUSSIA,
info@xema.ru; www.xema.ru

	Nomenclature term	Catalog number	Short name:	EDMA Classification	Class	Form number All changed by 00313369	Registration number	Certificate number	Registration date	Exp. date
1.	THYROID PEROXIDASE (INCL. MICROSOMAL) ANTIBODIES	K131	aTPO EIA Cat. Nr K131	12-10-03-01-00	other	00082228	**DE/CA59/IVD/13/44**	00055095	2007-10-29	
2.	THYROGLOBULIN AUTOANTIBODIES	K132	aTG EIA Cat. Nr K132	12-10-03-04-00	other	00082229	**DE/CA59/IVD/13/43**	00055096	2007-10-29	
3.	MPO ANCA	K133	aMPO EIA Cat. Nr K133	12-10-90-09-00	other	00082229	**DE/CA59/IVD/13/42**	00055097	2007-10-29	
4.	TISSUE TRANSGLUTAMINASE ANTIBODIES	K160; K161	Anti-tTG IgG EIA Cat. Nr K160; Anti-tTG IgA EIA Cat. Nr K161	12-10-90-21-00	other	00082231	**DE/CA59/IVD/13/41**	00055098	2007-10-29	
5.	GLIADIN ANTIBODIES	K180; K181; K182A, K182G	Gliadin IgG EIA Cat. Nr K180; Gliadin IgA EIA Cat. Nr K181 ; Deamidated Gliadin IgA EIA, Deamidated Gliadin IgG EIA	12-10-90-06-00	other	00082232/ changed by 00120956	**DE/CA59/IVD/13/40**	00055099	2011-08-11	
6.	IMMUNOGLOBULIN E – TOTAL	K200	Total IgE EIA Cat. Nr K200	12-02-01-02-00	other	00082233	**DE/CA59/IVD/13/39**	00055100	2007-10-29	
7.	THYROID STIMULATING HORMONE	K201; K201A	TSH EIA Cat. Nr K201; TSH Plus EIA Cat. Nr K201A	12-04-01-11-00	other	00082237	**DE/CA59/IVD/13/38**	00055103	2007-10-29	
8.	LUTEINISING HORMONE	K202	LH EIA Cat. Nr K202	12-05-01-05-00	other	00082238	**DE/CA59/IVD/13/37**	00055104	2007-10-29	
9.	FOLLICLE STIMULATING HORMONE	K203	FSH EIA Cat. Nr K203	12-05-01-04-00	other	00082239	**DE/CA59/IVD/13/36**	00055105	2007-10-29	
10.	HUMAN GROWTH HORMONE	K204	GH EIA Cat. Nr K204	12-06-04-02-00	other	00082240	**DE/CA59/IVD/13/35**	00055106	2007-10-29	
11.	HUMAN CHORIONIC GONADOTROPIN TOTAL	K205	HCG EIA Cat. Nr K205	12-05-02-05-00	other	00082241	**DE/CA59/IVD/13/34**	00055107	2007-10-29	
12.	PROLACTIN	K206	Prolactin EIA Cat. Nr K206	12-05-01-08-00	other	00082242	**DE/CA59/IVD/13/33**	00055108	2007-10-29	
13.	PROGESTERONE	K207; K207S	Progesterone EIA Cat. Nr K207 ; Salivary Progesterone EIA	12-05-01-06-00	other	00082243/ changed by 00120953	**DE/CA59/IVD/13/32**	00055109	2011-08-11	2025-05-25
14.	ESTRADIOL	K208	Estradiol EIA Cat. Nr K208	12-05-01-03-00	other	00082244	**DE/CA59/IVD/13/31**	00055110	2007-10-29	
15.	TESTOSTERONE (WITH DEHYDRO AND FREE TESTOSTERONE)	K209 ; K209S	Testosterone EIA Cat. Nr K209 ; Salivary Testosterone EIA	12-05-01-10-00	other	00082245/ changed by 00120954	**DE/CA59/IVD/13/30**	00055111	2011-08-11	
16.	CORTISOL	K210 ; K210S	Cortisol EIA Cat. Nr K210 ; Salivary Cortisol EIA	12-06-02-04-00	other	00082246/ changed by 00120955	**DE/CA59/IVD/13/29**	00055112	2011-08-11	
17.	TRIIODOTHYRONINE	K211	T3 EIA Cat. Nr K211	12-04-01-05-00	other	00082247	**DE/CA59/IVD/13/28**	00055113	2007-10-29	
18.	THYROXINE	K212	T4 EIA Cat. Nr K212	12-04-01-07-00	other	00082248	**DE/CA59/IVD/13/27**	00055114	2007-10-29	
19.	FREE TRIIODOTHYRONINE	K213	Free T3 EIA Cat. Nr K213	12-04-01-01-00	other	00082250	**DE/CA59/IVD/13/26**	00055115	2007-10-29	
20.	FREE THYROXINE	K214	Free T4 EIA Cat. Nr K214	12-04-01-02-00	other	00082251	**DE/CA59/IVD/13/25**	00055116	2007-10-29	
21.	DEHYDRO-EPIANDROSTERONE SULPHATE (INCL. DHEA)	K215	DHEA-S EIA Cat. Nr K215	12-05-01-02-00	other	00082253	**DE/CA59/IVD/13/24**	00055117	2007-10-29	
22.	17 OH PROGESTERONE	K217	17-OH-Progesterone EIA Cat. Nr K217	12-05-01-07-00	other	00082256	**DE/CA59/IVD/13/22**	00055118	2007-10-29	
23.	CANCER ANTIGEN 125	K222	CA 125 EIA Cat. Nr K222	12-03-01-06-00	other	00082257	**DE/CA59/IVD/13/23**	00055119	2007-10-29	
24.	CANCER ANTIGEN 19-9	K223	CA 19.9 EIA Cat. Nr K223	12-03-01-03-00	other	00082258	**DE/CA59/IVD/13/21**	00055120	2007-10-29	
25.	CARCINOEMBRYONIC ANTIGEN	K224	CEA EIA Cat. Nr K224	12-03-01-31-00	other	00082262	**DE/CA59/IVD/13/20**	00055123	2007-10-29	
26.	ALPHAFETOPROTEIN	K225	AFP EIA Cat. Nr K225	12-03-90-01-00	other	00082264	**DE/CA59/IVD/13/19**	00055124	2007-10-29	
27.	CANCER ANTIGEN 15-3	K226	M12 (CA 15.3) EIA Cat. NrK226	12-03-01-02-00	other	00082265	**DE/CA59/IVD/13/18**	00055125	2007-10-29	

	Nomenclature term	Catalog number	Short name:	EDMA Classification	Class	Form number All changed by 00313369	Registration number	Certificate number	Registration date	Exp. date
28.	OTHER CANCER ANTIGENS	K227; K228	MUCI1 M22 EIA Cat. Nr K227; MUCI1 M20 EIA Cat. Nr K228	12-03-01-90-00	other	00082266	**DE/CA59/IVD/13/17**	00055126	2007-10-29	
29.	OTHER OTHER TUMOUR MARKERS	K232	Thyroglobulin EIA Cat. Nr K232	12-03-90-90-00	other	00082267	**DE/CA59/IVD/13/16**	00055127	2007-10-29	
30.	ß HUMAN CHORIONIC GONADOTROPIN (INCL. SUBUNIT)	K235	Free beta HCG EIA Cat. Nr K235	12-05-02-06-00	other	00082268	**DE/CA59/IVD/13/15**	00055128	2007-10-29	
31.	PREGNANCY ASSOCIATED PLASMA PROTEIN - A (DOWNS)	K238	PAPP-A EIA Cat. Nr K238	12-05-02-10-00	other	00082269	**DE/CA59/IVD/13/14**	00055129	2007-10-29	
32.	OTHER OTHER PLASMA PROTEINS	K240	Alveomucin EIA Cat. Nr K240	12-01-90-90-00	other	00082270	**DE/CA59/IVD/13/13**	00055130	2007-10-29	
33.	C-REACTIVE PROTEIN	K250	CRP EIA Cat. Nr K250	12-11-01-09-00	other	00082271	**DE/CA59/IVD/13/12**	00055131	2007-10-29	
34.	SEX HORMONE BINDING GLOBULIN	K268	SHBG EIA Cat. Nr K268	12-05-01-09-00	other	00082272	**DE/CA59/IVD/13/11**	00055132	2007-10-29	
35.	TROPONIN (T + I)	K291	Troponin I EIA Cat. Nr K291	12-13-01-07-00	other	00082273	**DE/CA59/IVD/13/10**	00055133	2007-10-29	
36.	IMMUNOGLOBULIN G	K271	Total IgG EIA Cat. Nr K271	12-01-01-05-00	other	00082274	**DE/CA59/IVD/13/9**	00055134	2007-10-29	
37.	IMMUNOGLOBULIN G SUBCLASS REAGENTS	K272; K274	IgG2 EIA Cat. Nr K272; IgG4 EIA Cat. Nr K274	12-01-01-06-00	other	00082275	**DE/CA59/IVD/13/8**	00055135	2007-10-29	
38.	IMMUNOGLOBULIN A	K275	Total IgA EIA Cat. Nr K275	12-01-01-01-00	other	00082276	**DE/CA59/IVD/13/7**	00055136	2007-10-29	
39.	IMMUNOGLOBULIN M	K277	Total IgM EIA Cat. Nr K277	12-01-01-07-00	other	00082277	**DE/CA59/IVD/13/6**	00055137	2007-10-29	
40.	RHEUMATOID/AUTOIMMUNE CONTROLS	KQ13; KQ14; KQ15	AutoQon AT immunoassay control set Cat. Nr KQ13; AutoQon ANA/ENA immunoassay control set Cat. Nr KQ14; AutoQon ACL immunoassay control set Cat. Nr KQ15	12-50-01-14-00	other	00082278	**DE/CA59/IVD/13/5**	00055138	2007-10-29	2025-05-25
41.	HORMONE CONTROLS	KQ21	HormoQon immunoassay control set Cat. Nr KQ21	12-50-01-04-00	other	00082279	**DE/CA59/IVD/13/4**	00055139	2007-10-29	
42.	TUMOUR MARKER CONTROLS	KQ22	OmaQon immunoassay control set Cat. Nr KQ22	12-50-01-10-00	other	00082280	**DE/CA59/IVD/13/3**	00055140	2007-10-29	
43.	CYFRA 21-1	K236	CYFRA 21-1 EIA	12-03-01-20-00	other	00120946	**DE/CA59/IVD/13/45**	00078973	2011-08-11	
44.	CANCER ANTIGEN 72-4	K244	CA 72-4 EIA	12-03-01-05-00	other	00120947	**DE/CA59/IVD/13/46**	00078974	2011-08-11	
45.	NEONATAL THYROID STIMULATING HORMONE	K201N	TSH-Neo EIA	12-04-01-03-00	other	00120948	**DE/CA59/IVD/13/47**	00078975	2011-08-11	
46.	ESTRIOL	K218	Free Estriol EIA	12-05-02-02-00	other	00120950	**DE/CA59/IVD/13/48**	00078977	2011-08-11	
47.	IMMUNOGLOBULIN E - MONOTEST/MONORESULT - MULTI AG	K200S	Specific IgE EIA	12-02-01-04-00	other	00120951	**DE/CA59/IVD/13/49**	00078978	2011-08-11	
48.	KAPPA AND LAMBDA CHAIN	K279K K279L	Free kappa Igg light chain EIA, Free lambda Igg light chain EIA	12-01-01-20-00	other	00120952	**DE/CA59/IVD/13/50**	00078979	2011-08-11	
49.	TRYPSIN NEONATAL	K242	Neonatal IRT EIA Cat. Nr K242	12-01-90-08-00	other	00125311	**DE/CA59/IVD/13/51**	00081283	2013-01-09	
50.	NEURON SPECIFIC ENOLASE	K234	NSE EIA Cat. Nr K234	12-03-90-08-00	other	00126089	**DE/CA59/IVD/13/52**	00081687	2013-03-20	
51.	OTHER OTHER TUMOUR MARKERS	K239	HE – 4 EIA Cat. Nr K239	12-03-90-90-00	other	00126090	**DE/CA59/IVD/13/53**	00081688	2013-03-20	
52.	HSV IgG	K104	HSV ½ IgG EIA (Cat. Nr K104)	15-04-03-05-00	other	00127648	**DE/CA59/IVD/13/67**	00082628	2013-09-10	
53.	HSV IgM	K104M	HSV ½ IgM EIA (Cat. Nr K104M)	15-04-03-06-00	other	00127649	**DE/CA59/IVD/13/66**	00082629	2013-09-10	
54.	MYCOPLASMA ANTIBODY ASSAYS	K106	Mycoplasma IgG EIA (Cat. Nr K106)	15-01-08-03-00	other	00127650	**DE/CA59/IVD/13/65**	00082630	2013-09-10	
55.	SYPHILIS ANTIBODY ASSAYS TOTAL	K111	Treponema pallidum Total Ab EIA (Cat. Nr K111)	15-01-03-03-00	other	00127651	**DE/CA59/IVD/13/64**	00082631	2013-09-10	

	Nomenclature term	Catalog number	Short name:	EDMA Classification	Class	Form number All changed by 00313369	Registration number	Certificate number	Registration date	Exp. date
56.	SYPHILIS ANTIBODY IGG	K111G	Treponema pallidum IgG EIA (Cat. Nr K111G)	15-01-03-05-00	other	00127652	**DE/CA59/IVD/13/63**	00082632	2013-09-10	
57.	SYPHILIS ANTIBODY IGM	K111M	Treponema pallidum IgM EIA (Cat. Nr K111M)	15-01-03-06-00	other	00127653	**DE/CA59/IVD/13/62**	00082633	2013-09-10	
58.	H. PYLORI ANTIBODY ASSAYS	K119	H.pylori IgG EIA (Cat. Nr K119)	15-01-04-03-00	other	00127654	**DE/CA59/IVD/13/61**	00082634	2013-09-10	
59.	H. PYLORI ANTIBODY ASSAYS	K119M	H.pylori IgM EIA (Cat. Nr K119M)	15-01-04-03-00	other	00127655	**DE/CA59/IVD/13/60**	00082635	2013-09-10	
60.	ASPERGILLUS	K121	Aspergillus IgG EIA (Cat. Nr K121)	15-06-01-01-00	other	00127656	**DE/CA59/IVD/13/59**	00082636	2013-09-10	
61.	OTHER OTHER BACTERIOLOGY IMMUNOASSAY	K126	Ureaplasma IgG EIA (Cat. Nr K126)	15-01-90-90-00	other	00127657	**DE/CA59/IVD/13/58**	00082637	2013-09-10	
62.	GIARDIA LAMBLIA	K171 K171X	Giardia lamblia Total Ab EIA (Cat. Nr 171); Giardia lambliaIgG/IgM/IgA EIA (Cat. No. K171X)	15-05-10-08-00	other	00127658 changed by 00147228	**DE/CA59/IVD/13/57Ä1**	00082638 changed by 00082638	2013-09-10 changed 2019-02-27	
63.	OTHER TUMOUR MARKER RAPID TESTS	X22OV	XEMAtestOvaScreen (Cat. Nr X22OV)	12-70-03-90-00	other	00127659	**DE/CA59/IVD/13/56**	00082639	2013-09-10	
64.	OTHER TUMOUR MARKER RAPID TESTS	X222	XEMAtestCA125 (Cat. Nr X222)	12-70-03-90-00	other	00127660	**DE/CA59/IVD/13/55**	00082640	2013-09-10	
65.	OTHER TUMOUR MARKER RAPID TESTS	X239	XEMAtestHE4 (Cat. Nr X239)	12-70-03-90-00	other	00127661	**DE/CA59/IVD/13/54**	00082641	2013-09-10	2025-05-25
66.	IMMUNOGLOBULIN A IgA	K276	SECRETORY IgA (sIgA) EIA (Cat. No. K276)	12-01-01-01-00	other	00132459	**DE/CA59/IVD/13/68**	00084857	2014-12-15	
67.	ECHINOCOCCUS	K175	Cestodes IgG EIA (Cat. No. K175)	15-05-10-04-00	other	00137730	**DE/CA59/IVD/13/72E**	00087715	2016-09-08	
68.	DISTOMATOSIS	K176	Fasciola IgG EIA (Cat. No. K176)	15-05-10-03-00	other	00137731	**DE/CA59/IVD/13/71E**	00087716	2016-09-08	
69.	TESTOSTERONE (WITH DEHYDRO AND FREE TESTOSTERONE)	K219	Free Testosterone EIA (Cat. No. K219)	12-05-01-10-00	other	00137732	**DE/CA59/IVD/13/70E**	00087717	2016-09-08	
70.	HUMAN PLACENTAL LACTOGEN HPL	K246	Human Placental Lactogen EIA (Cat. No. K246)	12-05-02-07-00	other	00137733	**DE/CA59/IVD/13/69E**	00087718	2016-09-08	
71.	CANCER ANTIGEN 242	K243	CA 242 EIA (Cat. No. K243)	12-03-01-08-00	other	00139880	**DE/CA59/IVD/13/73**	00088906	2017-04-11	
72.	INSULIN	K267N	Insulin EIA (Cat. No. K267N)	12-06-01-03-00	other	00145610	**DE/CA59/IVD/13/77**	00091667	2018-10-05	
73.	C-PEPTIDE	K267C	C-peptide EIA(Cat. No. K267C)	12-06-01-01-00	other	00145608	**DE/CA59/IVD/13/76**	00091665	2018-10-05	
74.	OTHER PREGNANCY TESTING HORMONES	K245	AMH EIA (Cat. No. K245)	12-05-02-90-00	other	00145607	**DE/CA59/IVD/13/75**	00091664	2018-10-05	
75.	SQUAMOUS CELL CARCINOMA ANTIGEN	K237	SCC(A) EIA (Cat. No. K237)	12-03-01-35-00	other	00145606	**DE/CA59/IVD/13/74**	00091663	2018-10-05	
76.	ASPERGILLUS	K021	GalM Ag EIA (Cat. No. K021)	15-06-01-01-00	other	00147229	**DE/CA59/IVD/13/78**	00092318	2019-02-27	

CE

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www.xema-medica.com

10.02.2022
Исх. № 10-01/02

STATEMENT

We, XEMA Co., Ltd. Having a registered office at 48, 9th Parkovaya st., 104264 Moscow, Russia, assign Sanmedico Srl. Having a registered office at srt. A. Corobceanu 7A, apt. 9, Chişinău MD 2012, Moldova, as authorized representative in correspondence with the conditions of directive 93/42/EEC, 98/79/EEC and 90/385/EEC.

We declare that the company mentioned above is authorized to register, notify, renew or modify the registration of medical devices on the territory of the Republic of Moldova.

Signature:

Dmitry S. Kostrikin

Deputy general manager

DNV

MANAGEMENT SYSTEM CERTIFICATE

Certificate no.:
282710-2019-AQ-MCW-FINAS

Initial certification date:
14 February 2019

Valid:
15 February 2022 – 14 February 2025

This is to certify that the management system of

XEMA Co, LTD

bld. 48, 9-th Parkovaya str., Moscow, Russian Federation, 105264

and the sites as mentioned in the appendix accompanying this certificate

has been found to conform to the Quality Management System standard:

ISO 9001:2015

This certificate is valid for the following scope:

Design and development, manufacturing and sales of in vitro tests for food and feed control, clinical and veterinary diagnostics and forensic investigations.

Place and date:
Espoo, 14 February 2022

For the issuing office:
DNV - Business Assurance
Keilaranta 1, 02150 Espoo, Finland

IAF MEMBER OF MULTILATERAL RECOGNITION ARRANGEMENT

FINAS
Finnish Accreditation Service
S001 (EN ISO/IEC 17021-1)

Kimmo Haarala
Management Representative

Certificate no.: 282710-2019-AQ-MCW-FINAS
Place and date: Espoo, 14 February 2022

Appendix to Certificate

XEMA Co, LTD

Locations included in the certification are as follows:

Site Name	Site Address	Site Scope
XEMA Co, LTD	bld. 48, 9-th Parkovaya str., Moscow, Russian Federation, 105264	Design and development, manufacturing and sales of in vitro tests for food and feed control, clinical and veterinary diagnostics and forensic investigations.
XEMA Co, LTD (production site)	2B, Trubetskaya str., Balashikha, Moscow region, Russian Federation, 125000	Design and development, manufacturing and sales of in vitro tests for food and feed control, clinical and veterinary diagnostics and forensic investigations.

Instruction for use

РУКОВОДСТВО ПОЛЬЗОВАТЕЛЯ НАБОР РЕАГЕНТОВ ДЛЯ ИММУНОФЕРМЕНТНОГО ОПРЕДЕЛЕНИЯ ТИРЕОТРОПНОГО ГОРМОНА В СЫВОРОТКЕ (ПЛАЗМЕ) КРОВИ

«ТТГ-ИФА»

A SOLID-PHASE ENZYME IMMUNOASSAY FOR THE QUANTITATIVE DETERMINATION OF TSH IN HUMAN SERUM OR PLASMA

TSH EIA

НОМЕР ПО КАТАЛОГУ REF **K201**

ТУ № 9398-201-18619450-2010

РЕГИСТРАЦИОННОЕ УДОСТОВЕРЕНИЕ
№ ФСР 2007/00665 от 25 октября 2010 г.

Антитела к ВИЧ 1,2, вирусу гепатита С и HBsAg отсутствуют
Контрольные сыворотки, входящие в состав набора, инактивированы.

Σ For 96 determinations/На 96 определений

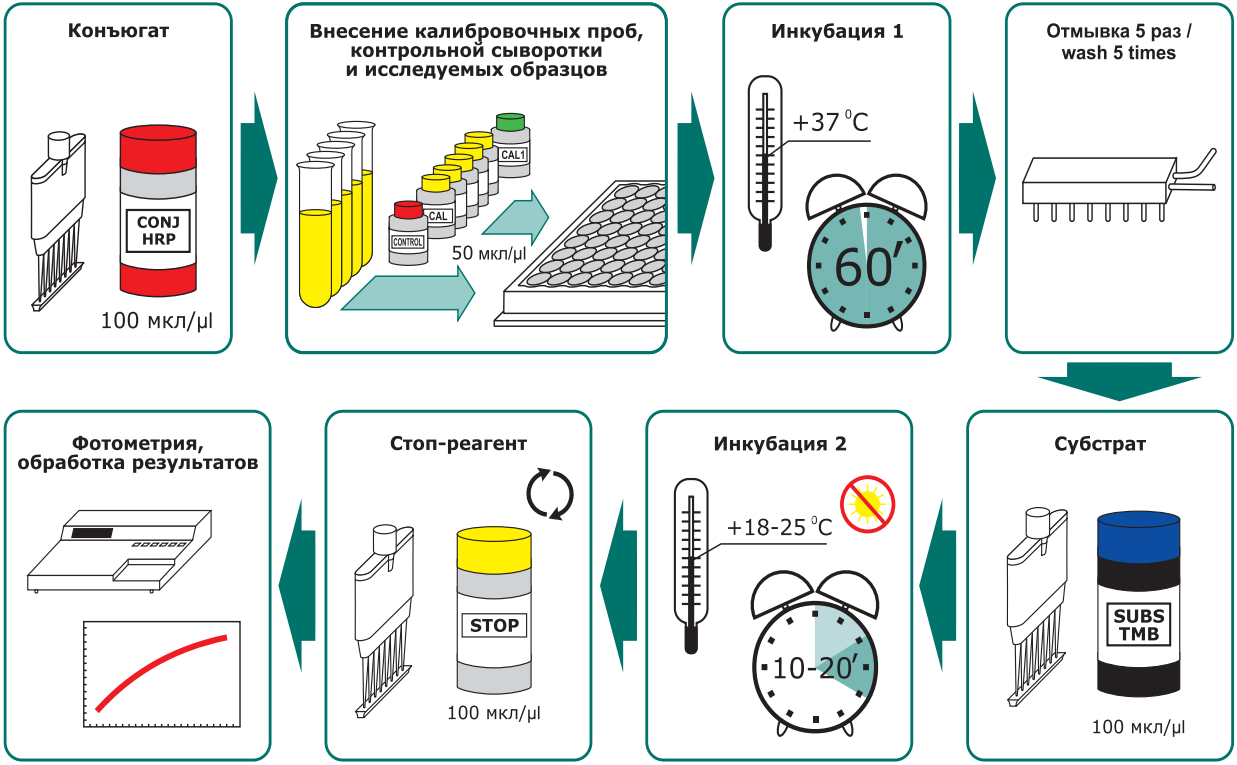
IVD Для *ин витро* диагностики

XEMA Co., Ltd.
The 9th Parkovaya str., 48
105264 Moscow, Russia
Telephone/fax: +7(495) 737-39-36; 737-00-40
e-mail: redkin@xema-medica.com
internet: www.xema-medica.com

CE EC REP

Authorized Representative in EU:
Polmed.de
Steinacker 20, D-73773
Aichwald, Germany
e-mail: info@polmed.de

Схема проведения анализа / Test procedure



K201; K202-206; K221; K224; K225

СОДЕРЖАНИЕ

CONTENT

Руководство составлено руководителем службы клиентского сервиса
ООО «ХЕМА», к. б. н. Д. С. Кострикиным

НАБОР РЕАГЕНТОВ ДЛЯ ИММУНОФЕРМЕНТНОГО ОПРЕДЕЛЕНИЯ ТИРЕОТРОПНОГО ГОРМОНА В СЫВОРОТКЕ (ПЛАЗМЕ) КРОВИ «ТТГ-ИФА»

1. НАЗНАЧЕНИЕ

1.1. Набор реагентов «ТТГ-ИФА» предназначен для количественного определения концентрации тиреотропного гормона в сыворотке (плазме) крови методом твердофазного иммуноферментного анализа.

1.2. Тиреотропный гормон (ТТГ) - гликопротеин с молекулярной массой около 30 кДа, секретируется передней долей гипофиза. Молекула ТТГ состоит из двух нековалентно связанных полипептидных цепей: альфа- и бета-субъединицы. Специфичность и биологическую активность гормона определяет его бета-субъединица. ТТГ вызывает продукцию и выделение щитовидной железой тироксина (Т4) и трийодтиронина (Т3). При увеличении концентрации этих гормонов в сыворотке крови секреция ТТГ ингибируется; наоборот, когда уровень тиреоидных гормонов уменьшается, в гипофизе увеличивается выброс ТТГ и, следовательно, увеличивается производство и выброс гормонов щитовидной железы. Секреция ТТГ подчиняется циркадным (околосуточным) ритмам с акрофазой в ночное время. Наибольший уровень ТТГ наблюдается в утренние часы (6 часов). Суточные колебания незначительны, однако, если полученные результаты не соответствуют клинической картине и параметрам других исследований, рекомендуется повторное проведение анализа. Показания к определению ТТГ:

1) диагностика нарушений функции щитовидной железы;

2) гипотиреоз (уровень ТТГ повышается. Диагноз подтверждается низкими концентрациями общего и свободного тироксина и трийодтиронина. При субклиническом легком гипотиреозе, когда уровни Т3 и Т4 в пределах нормы, определение ТТГ является решающим);

3) гипертиреоз (синтез и секреция ТТГ подавлены); оценка адекватности заместительной терапии тироксином;

4) скрининг врожденного гипотиреоза (на пятом дне жизни определяют уровень ТТГ в пятне крови на фильтровальной бумаге или в сыворотке крови). Уровень ТТГ повышен при рождении (до 35 мМЕд/л), однако через нескольких дней снижается до базального (как у мальчиков, так и у девочек).

Концентрация ТТГ увеличивается во время беременности. Повышенное содержание гормона наблюдается после тяжелых физических нагрузок. Пониженное давление и пониженная температура также стимулируют секрецию ТТГ. Кортизол и гормон роста угнетают секрецию ТТГ. Пониженное содержание ТТГ часто наблюдается у пожилых людей, при хронической почечной недостаточности, циррозе печени, замедленном половом развитии, вторичной аменорее, синдроме Кушинга, акромегалии.

2. ПРИНЦИП РАБОТЫ НАБОРА

Определение тиреотропного гормона основано на использовании «сэндвич»-варианта твердофазного иммуноферментного анализа. На внутренней поверхности лунок планшета иммобилизованы мышиные моноклональные антитела к бета-цепи ТТГ человека. В лунках планшета, при добавлении исследуемого образца, происходит связывание ТТГ, содержащегося в исследуемом образце, с антителами на твердой фазе. Образовавшийся комплекс выявляют с помощью конъюгата (Fab2) фрагмента мышиных моноклональных антител к бета-цепи ТТГ человека с пероксидазой хрена. В результате образуется связанный с пластиком «сэндвич», содержащий пероксидазу. Во время инкубации с раствором субстрата тетраметилбензидина (ТМБ) происходит окрашивание растворов в лунках. Интенсивность окраски прямо пропорциональна концентрации тиреотропного гормона в исследуемом образце. Концентрацию тиреотропного гормона в исследуемых образцах определяют по калибровочному графику зависимости оптической плотности от содержания тиреотропного гормона в калибровочных пробах.

3. АНАЛИТИЧЕСКИЕ ХАРАКТЕРИСТИКИ

3.1. Специфичность. Перекрестная реакция мышиных моноклональных антител к бета-цепи ТТГ с другими аналитами приведена в таблице:

Аналит	Перекрестная реакция, %
ХГ	<0.1
ЛГ	<0.1
ФСГ	<0.1

3.2. Воспроизводимость.

Коэффициент вариации результатов определения содержания ТТГ в одном и том же образце сыворотки (плазмы) крови с использованием Набора «ТТГ-ИФА» не превышает 8.0%.

3.3. Линейность.

Зависимость концентрации ТТГ в образцах сыворотки (плазмы) крови при разведении их сывороткой (плазмой) крови, не содержащей ТТГ, имеет линейный характер в диапазоне концентраций 0.2–20.0 мМЕ/л и составляет ±10.0%.

3.4. Точность.

Данный аналитический параметр проверяется тестом на «открытие» – соответствие измеренной концентрации ТТГ предписанной, полученной путем смешивания равных объемов контрольной сыворотки и калибровочной пробы 1.0 мМЕ/л. Процент «открытия» составляет 90–110%.

3.5. Чувствительность.

Минимальная достоверно определяемая Набором «ТТГ-ИФА» концентрация ТТГ в сыворотке (плазме) крови не превышает 0.04 мМЕ/л.

4. СОСТАВ НАБОРА

	Код компонента	Символ	Наименование	Кол-во	Ед.	Описание
1	P201Z	SORB MTP	**Планшет** 96-луночный полистироловый, стрипированный, готов к использованию	1	шт.	-
2	C201Z	CAL 1–6	**Калибровочные пробы** на основе фосфатного буфера (pH 7.2–7.4), содержащие известные количества тиреотропного гормона – **0; 0.2; 1; 5; 10; 20 мМЕ/л**, готовы к использованию (калибровочная проба 0 мМЕ/л – 2 мл, остальные – по 0.8 мл каждая)	6	шт.	прозрачные жидкости красного цвета (калибровочная проба 0 – прозрачная бесцветная жидкость)
3	Q201Z	CONTROL	**Контрольная сыворотка** на основе сыворотки крови человека с известным содержанием тиреотропного гормона, готова к использованию (0.8 мл)	1	шт.	прозрачная бесцветная жидкость
4	T201Z	CONJ HRP	**Конъюгат,** готов к использованию (14 мл)	1	шт.	прозрачная жидкость синего цвета
5	R055Z	SUBS TMB	**Раствор субстрата тетраметилбензидина** (ТМБ), готов к использованию (14 мл)	1	шт.	прозрачная бесцветная жидкость
6	S008Z	BUF WASH 26X	**Концентрат отмывочного раствора** (солевой раствор с твин-20 и бензойной кислотой), 26х-кратный (22 мл)	1	шт.	прозрачная бесцветная жидкость
7	R050Z	STOP	**Стоп-реагент**, готов к использованию (14 мл)	1	шт.	прозрачная бесцветная жидкость
8	N003	-	Бумага для заклеивания планшета	2	шт.	-
9	K201I	-	Руководство пользователя по применению Набора реагентов «ТТГ-ИФА»	1	шт.	-
10	K201Q	-	Паспорт контроля качества Набора реагентов «ТТГ-ИФА»	1	шт.	-

Комплектация 1: Набор рассчитан на проведение анализа в дубликатах 41 исследуемых образцов, 6 калибровочных проб и 1 пробы контрольной сыворотки (всего 96 определений).

Комплектация 5: Набор рассчитан на проведение анализа в дубликатах 205 исследуемых образцов, 30 калибровочных проб и 5 пробы контрольной сыворотки (всего 480 определений).

	Символ	Комплектация 5
		Количество
1	SORB MTP	5 шт
2	CAL 1 - 6	5 комплектов (С1 – 2 мл, С2-С6, по 0.8 мл); или 10 мл С1 и по 4 мл С2-С6
3	CONTROL	5х0.8 мл или 1х4 мл
4	CONJ HRP	5х14 мл или 2х30 мл
5	SUBS TMB	2х30 мл
6	BUF WASH 26X	2х50 мл
7	STOP	2х30 мл
8	N003	10 шт

5. МЕРЫ ПРЕДОСТОРОЖНОСТИ

5.1. Потенциальный риск применения Набора – класс 1 (ГОСТ Р 51609-2000).

5.2. Все компоненты Набора, за исключением стоп-реагента (5.0% раствор серной кислоты), в используемых концентрациях являются нетоксичными.

Раствор серной кислоты обладает раздражающим действием. Избегать разбрызгивания и попадания на кожу и слизистые. При попадании на кожу и слизистые пораженный участок следует промыть большим количеством проточной воды.

5.3. При работе с Набором следует соблюдать «Правила устройства, техники безопасности, производственной санитарии, противоэпидемического режима и личной гигиены при работе в лабораториях (отделениях, отделах) санитарно-эпидемиологических учреждений системы Министерства здравоохранения СССР» (Москва, 1981 г.).

5.4. При работе с Набором следует надевать одноразовые резиновые или пластиковые перчатки, так как образцы крови человека следует рассматривать как потенциально инфицированный материал, способный длительное время сохранять и передавать ВИЧ, вирус гепатита или любой другой возбудитель вирусной инфекции.

6. ОБОРУДОВАНИЕ И МАТЕРИАЛЫ, НЕОБХОДИМЫЕ ПРИ РАБОТЕ С НАБОРОМ

- фотометр вертикального сканирования, позволяющий измерять оптическую плотность содержимого лунок планшета при длине волны 450 нм;
- термостат, поддерживающий температуру +37 °С ±3 °С;
- дозаторы со сменными наконечниками, позволяющие отбирать объемы в диапазоне 25–250 мкл;
- цилиндр мерный вместимостью 1000 мл;
- вода дистиллированная;
- перчатки резиновые или пластиковые;
- бумага фильтровальная.

7. ПОДГОТОВКА РЕАГЕНТОВ ДЛЯ АНАЛИЗА

7.1. Перед проведением анализа компоненты Набора и исследуемые образцы сыворотки (плазмы) крови следует выдержать при комнатной температуре (+18…+25 °С) не менее 30 мин.

7.2. Приготовление планшета.

Вскрыть пакет с планшетом и установить на рамку необходимое количество стрипов. Оставшиеся неиспользованными стрипы, чтобы предотвратить воздействие на них влаги, тщательно заклеить бумагой для заклеивания планшета и хранить при температуре +2…+8 °С в течение всего срока годности Набора.

7.3. Приготовление отмывочного раствора.

Содержимое флакона с концентратом отмывочного раствора (22 мл), перенести в мерный цилиндр вместимостью 1000 мл, добавить 550 мл дистиллированной воды и тщательно перемешать. В случае дробного использования Набора следует отобрать необходимое количество концентрата отмывочного раствора и развести дистиллированной водой в 26 раз (1 мл концентрата отмывочного раствора + 25 мл дистиллированной воды).

8. УСЛОВИЯ ХРАНЕНИЯ И ЭКСПЛУАТАЦИИ НАБОРА

8.1. Набор реагентов «ТТГ-ИФА» должен храниться в упаковке предприятия-изготовителя при температуре +2…+8 °С в течение всего срока годности, указанного на упаковке Набора. Допускается хранение (транспортировка) Набора при температуре до +25 °С не более 15 суток. Не допускается замораживание целого набора. **Допускается однократное замораживание (-20 °С) калибровочных проб и контрольной сыворотки в аликвотах.**

8.2. Набор рассчитан на проведение анализа в дубликатах 41 исследуемого образца, 6 калибровочных проб и 1 пробы контрольной сыворотки (всего 96 определений).

8.3. В случае дробного использования Набора компоненты следует хранить следующим образом:

- оставшиеся неиспользованными стрипы необходимо тщательно заклеить бумагой для заклеивания планшета и хранить при температуре +2…+8 °С в течение всего срока годности Набора;
- конъюгат, субстрат, стоп-реагент после вскрытия флаконов следует хранить при температуре +2…+8 °С в течение всего срока годности Набора;
- калибровочные пробы и контрольную сыворотку после вскрытия флаконов следует хранить при температуре +2…+8 °С не более 2 месяцев;
- оставшийся неиспользованным концентрат отмывочного раствора следует хранить при температуре +2…+8 °С в течение всего срока годности Набора. Приготовленный отмывочный раствор следует хранить при комнатной температуре (+18…+25 °С) не более 15 суток или при температуре +2…+8 °С не более 45 суток.

Примечание. После использования реагента немедленно закрывайте крышку флакона. Закрывайте каждый флакон своей крышкой.

8.4. Для проведения анализа не следует использовать гемолизированную, мутную сыворотку (плазму) крови, а также сыворотку (плазму) крови, содержащую азид натрия. Если анализ производится не в день взятия крови, сыворотку (плазму) следует хранить при температуре -20 °С. Повторное замораживание-оттаивание образцов сыворотки (плазмы) крови не допускается. Допускается исследование сывороток, хранение которых с момента забора крови осуществлялось при температуре от +2 ºС до +8 ºС не более 7 суток.

8.5. Исключается использование для анализа образцов сыворотки (плазмы) крови людей, получавших в целях диагностики или терапии препараты, в состав которых входят мышиные антитела.

8.6. При использовании Набора для проведения нескольких независимых серий анализов следует иметь в виду, что для каждого независимого определения необходимо построение нового калибровочного графика; кроме этого, рекомендуется определение концентрации ТТГ в контрольной сыворотке.

8.7. Для получения надежных результатов необходимо строгое соблюдение руководства пользователя по применению Набора.

8.8. Не используйте компоненты из других наборов или из аналогичных наборов других серий.

9. ПРОВЕДЕНИЕ АНАЛИЗА

1	Поместите в рамку необходимое количество стрипов – исследуемые образцы в 2 повторах и 14 лунок для калибровочных проб и контрольной сыворотки.
2	Если предполагаемая концентрация ТТГ в исследуемом образце превышает 20 мМЕ/л, его следует дополнительно развести, используя калибровочную пробу 0. Использование других буферов и реагентов для разбавления образцов может искажать результаты определения! Примечание. Для получения надежных результатов рекомендуется использовать несколько последовательных разведений исследуемого образца сыворотки (плазмы) крови.
3	**Внесите во все лунки по 100 мкл конъюгата.**
4	**Внесите в соответствующие лунки в дубликатах по 50 мкл калибровочной пробы и контрольной сыворотки. В остальные лунки внесите в дубликатах по 50 мкл исследуемых образцов сыворотки (плазмы) крови**. Внесение калибровочных проб, контрольной сыворотки и исследуемых образцов необходимо произвести в течение 15 минут.
5	Заклейте планшет бумагой для заклеивания планшета и **инкубируйте** его **в течение 60 минут при температуре +37 °С.**
6	По окончании инкубации удалите содержимое лунок и **отмойте лунки 5 раз**. При каждой отмывке добавьте во все лунки по 250 мкл отмывочного раствора (см. п. 7.3), встряхните планшет круговыми движениями по горизонтальной поверхности с последующей аспирацией или декантированием. Задержка при отмывке (замачивание лунок) не требуется. При каждом декантировании необходимо тщательно удалять остатки жидкости из лунок постукиванием планшета в перевернутом положении по фильтровальной бумаге.
7	**Внесите во все лунки по 100 мкл раствора субстрата тетраметилбензидина**. Внесение раствора субстрата тетраметилбензидина в лунки необходимо произвести в течение 2–3 минут. Инкубируйте планшет в темноте при комнатной температуре (+18…+25 °С) в течение 10–20 минут в зависимости от степени развития синего окрашивания.
8	**Внесите во все лунки** с той же скоростью и в той же последовательности, как и раствор субстрата тетраметилбензидина, **по 100 мкл стоп-реагента**, при этом содержимое лунок окрашивается в ярко-желтый цвет.
9	**Измерьте величину оптической плотности (ОП) содержимого лунок планшета на фотометре** вертикального сканирования **при длине волны 450 нм**. Измерение ОП содержимого лунок планшета необходимо произвести в течение 15 мин после внесения стоп-реагента. Бланк фотометра выставляйте по калибровочной пробе С1.
10	Постройте в линейных координатах калибровочный график: ось абсцисс (x) – концентрация ТТГ в калибровочных пробах (мМЕ/л), ось ординат (y) – оптическая плотность калибровочных проб (ОП 450 нм). Для алгоритма обсчета (аппроксимации) калибровочного графика используйте интервальный (кусочно-линейный, «от точки к точке») метод.
11	Определите по калибровочному графику содержание ТТГ в исследуемых образцах. Если исследуемый образец предразводили (см. п.2), умножьте полученный результат на фактор разведения.

10. ОЖИДАЕМЫЕ ЗНАЧЕНИЯ И НОРМЫ

10.1. Основываясь на результатах исследований, проведенных ООО «ХЕМА», рекомендуем пользоваться нормами, приведенными ниже. Вместе с тем, в соответствии с правилами GLP (Хорошей лабораторной практики), каждая лаборатория должна сама определить параметры нормы, характерные для обследуемой популяции.

Примечание. Значения концентраций ТТГ в исследуемых образцах, находящиеся ниже границы чувствительности Набора (0.04 мМЕ/л), а также превышающие значение верхней калибровочной пробы (20.0 мМЕ/л) следует приводить в следующей форме: в исследуемом образце Х концентрация ТТГ ниже 0.04 мМЕ/л или выше 20.0 мМЕ/л.

Исследуемая группа	Единицы, мМЕ/л	
	Нижний предел	Верхний предел
Здоровые доноры	0.3	4.0

11. ЛИТЕРАТУРА

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Instruction for use

A SOLID-PHASE ENZYME IMMUNOASSAY FOR THE QUANTITATIVE DETERMINATION OF TSH IN HUMAN SERUM OR PLASMA

1. INTENDED USE

A solid-phase enzyme immunoassay for the quantitative determination of TSH in blood serum or plasma.

This kit is designed for measurement of TSH in blood serum or plasma. For possibility of use with other sample types, please, refer to Application Notes (on request). The kit contains reagents sufficient for 96 determinations and allows to analyze 41 unknown samples in duplicates.

2. SUMMARY AND EXPLANATION

Thyroid stimulating hormone (TSH) is a glycoprotein with molecular weight ca.30 kDa which is secreted by hypophysis. A molecule of TSH consists of two noncovalently bound subunits: α- and β-HCG. β-subunit determines biological activity and immunological specificity of TSH.

TSH stimulates thyroid gland to secrete thyroid hormones. TSH secretion in hypophysis is controlled by a negative feedback regulation by thyroid hormones. TSH secretion is subject to circadian rhythms with highest levels seen early in the morning (6 a.m.). Changes of TSH blood level during a day are not significant; nevertheless, if the results do not correspond with clinical status and other laboratory data, it is recommended to take and test another blood sample.

Determination of TSH level in serum is recommended in the following states and conditions:

1. Diagnostics of dysfunction of the thyroid gland;
2. Hypothyroidism (TSH level is increased. The diagnosis is confirmed by low concentrations of total and free T4 and T3. In mild subclinical forms when T4 and T3 levels are within normal ranges, determination of TSH concentration is critical);
3. Hyperthyroidism (synthesis and secretion of TSH are inhibited); monitoring of replacement therapy;
4. Screening for inherited hypothyroidism (on day 5 after birth TSH level in blood is determined). TSH level is elevated just after birth but it comes within the normal range in several days (both in boys and in girls).

Serum TSH level is elevated during pregnancy, after physical stress, in individuals with lowered blood pressure and lowered temperature. Secretion of TSH is inhibited by Cortisol and Growth hormone. Low TSH levels are often seen in elderly people, in patients with chronic renal insufficiency, liver cirrhosis, in retardation of sexual development, in secondary amenorrhea, Cushing syndrome, acromegaly.

In a present test system, β- chain specific monoclonal antibody XTB78 is used as capture reagent; enzyme-labelled (Fab2)-fragment of another β- chain specific monoclonal antibody XTB11 is used as tracer. This combination enables to minimize both cross-reactive reactions with other pituitary hormones and false positivity caused by anti-species antibodies.

3. PRINCIPLE OF THE TEST

This test is based on two-site sandwich enzyme immunoassay principle. Tested specimen is placed into the microwells coated by specific murine monoclonal to β chain human TSH-antibodies. Antigen from the specimen is captured by the antibodies coated onto the microwell surface. Second antibodies – murine monocnoclonal to (Fab2)-fragment of β chain human TSH, labelled with peroxidase enzyme, are then added into the microwells. After washing procedure, the remaining enzymatic activity bound to the microwell surface is detected and quantified by addition of chromogen-substrate mixture, stop solution and photometry at 450 nm. Optical density in the microwell is directly related to the quantity of the measured analyte in the specimen.

4. WARNINGS AND PRECAUTIONS

4.1. For professional use only.

4.2. This kit is intended for in vitro diagnostic use only.

4.3. INFECTION HAZARD: There is no available test methods that can absolutely assure that Hepatitis B and C viruses, HIV-1/2, or other infectious agents are not present in the reagents of this kit. All human products, including patient samples, should be considered potentially infectious. Handling and disposal should be in accordance with the procedures defined by an appropriate national biohazard safety guidelines or regulations.

4.4. Avoid contact with stop solution containing 5.0% H_2SO_4. It may cause skin irritation and burns.

4.5. Wear disposable latex gloves when handling specimens and reagents. Microbial contamination of reagents may give false results.

4.6. Do not use the kit beyond the expiration date.

4.7. All indicated volumes have to be performed according to the protocol. Optimal test results are only obtained when using calibrated pipettes and microplate readers.

4.8. Do not smoke, eat, drink or apply cosmetics in areas where specimens or kit reagents are handled.

4.9. Chemicals and prepared or used reagents have to be treated as hazardous waste according to the national biohazard safety guidelines or regulations.

4.10. Do not mix reagents from different lots.

4.11. Replace caps on reagents immediately. Do not swap caps.

4.12. Do not pipette reagents by mouth.

4.13. Specimens must not contain any AZIDE compounds – they inhibit activity of peroxidase.

4.14. Material Safety Data Sheet for this product is available upon request directly from XEMA Co., Ltd.

4.15. The Material Safety Data Sheet fit the requirements of EU Guideline 91/155 EC.

5. KIT COMPONENTS

5.1. Contents of the Kit

	Symbol	Description		Qty	Units	Colour code	Stability of opened/diluted components
1	SORB MTP	TSH EIA strips, 8x12 wells	polystyrene microwells coated with murine monoclonal to β chain human TSH	1	pcs		until exp.date
2	CAL 1–6	Calibrator set, 0.8 ml each, zero calibrator C1 – 2 ml The set contains 6 calibrators: 0; 0.2; 1; 5; 10; 20 mIU/l	human TSH diluted in phosphate buffered of preselected horses serum, casein solution, preservative – 0.1% phenol; also contains bright red dye	6	pcs	red (C1 – colourless)	2 months
3	CONTROL	Control serum (0.8 ml)	dilution of preselected human serum, with high content of TSH with casein solution; preservative – 0.1% phenol, colourless	1	pcs	colourless	2 months
4	CONJ HRP	Conjugate, 14 ml	aqueous solution of murine monocnoclonal to (Fab2)-fragment of β chain human TSH coupled with horseradish peroxidase diluted on phosphate buffered solution with casein from bovine milk and detergent (Tween-20), contains 0.1% phenol as preservative and bright blue dye	1	pcs	blue	until exp.date
5	SUBS TMB	Substrate solution, 14 ml	ready-to-use single-component tetramethylbenzidine (TMB) solution.	1	pcs	colourless	until exp.date
6	BUF WASH 26X	Washing solution concentrate 26X, 22 ml	aqueous solution of sodium chloride and detergent (Tween 20), contains proClin300 as a preservative	1	pcs	colourless	Concentrate – until exp.date Diluted washing solution – 45 days at 2-8 °C or 15 days at RT
7	STOP	Stop solution, 14 ml	5.0% vol/vol solution of sulphuric acid	1	pcs	colourless	until exp.date
8	N003	Plate sealing tape		2	pcs		N/A
9	K201ICEIR	Instruction TSH EIA, English		1	pcs		N/A
10	K201Q	QC data sheet TSH EIA		1	pcs		N/A

5.2. Equipment and material required but not provided
- Distilled or deionized water;
- Automatic or semiautomatic multichannel micropipettes, 100–250 µl, is useful but not essential;
- Calibrated micropipettes with variable volume, range volume 25–250 µl;
- Dry thermostat for 37 °C ±3 °C;
- Calibrated microplate photometer with 450 nm wavelength and OD measuring range 0–3.0.

5.3. Storage and stability of the Kit

Store the whole kit at +2…+8 °C upon receipt until the expiration date.

After opening the pouch keep unused microtiter wells TIGHTLY SEALED BY ADHESIVE TAPE (INCLUDED) to minimize exposure to moisture.

6. SPECIMEN COLLECTION AND STORAGE

This kit is intended for use with serum or plasma (ACD- or heparinized). Grossly hemolytic, lipemic, or turbid samples should be avoided.

Specimens may be stored for up to 48 hours at +2…+8 °C before testing. For a longer storage, the specimens should be frozen at -20 °C or lower. Repeated freezing/thawing should be avoided.

7. TEST PROCEDURE

7.1. Reagent Preparation
- All reagents (including unsealed microstrips) should be allowed to reach room temperature (+18…+25 °C) before use.
- All reagents should be mixed by gentle inversion or vortexing prior to use. Avoid foam formation.
- It is recommended to spin down shortly the tubes with calibrators on low speed centrifuge.
- Prepare washing solution from the concentrate BUF WASH 26X by 26 dilutions in distilled water.

7.2. Procedural Note:

It is recommended that pipetting of all calibrators and samples should be completed within 3 minutes.

7.3. Assay flowchart

See the example of calibration graphic in Quality Control data sheet.

7.4. Assay procedure

1	Put the desired number of microstrips into the frame; allocate 14 wells for the calibrators CAL 1–6 and control samples CONTROL and two wells for each unknown sample. DO NOT REMOVE ADHESIVE SEALING TAPE FROM UNUSED STRIPS.
2	If suggested analyte concentration in the sample exceeds the highest calibrator, additionally dilute this sample accordingly, using (zero calibrator). Use of other buffers or reagents for sample dilution may lead to incorrect measurement.
3	Dispense 100 µl of CONJ HRP into the wells.
4	Pipet 50 µl of calibrators CAL 1–6, control samples CONTROL and unknown samples into the wells. Cover the wells by plate adhesive tape (included into the kit).
5	Incubate 60 minutes at 37 °C.
6	Prepare washing solution by 26X dilution of washing solution concentrate (BUF WASH 26X) by distilled water. Wash the strips 5 times.
7	Dispense 100 µl of SUBS TMB into the wells.
8	Incubate 10-20 minutes at +18…+25 °C.
9	Dispense 100 µl of STOP into the wells.
10	Measure OD (optical density) at 450 nm.
11	Set photometer blank on first calibrator.
12	Apply point-by-point method for data reduction.

7.5. Handing notes

Calibrators and control sample(s) – only one freezing/thawing cycle is allowed

8. QUALITY CONTROL

It is recommended to use control samples according to state and federal regulations. The use of control samples is advised to assure the day to day validity of results.

The test must be performed exactly as per the manufacturer's instructions for use. Moreover the user must strictly adhere to the rules of GLP (Good Laboratory Practice) or other applicable federal, state, and local standards and/or laws. This is especially relevant for the use of control reagents. It is important to always include, within the test procedure, a sufficient number of controls for validating the accuracy and precision of the test.

The test results are valid only if all controls are within the specified ranges and if all other test parameters are also within the given assay specifications.

9. CALCULATION OF RESULTS

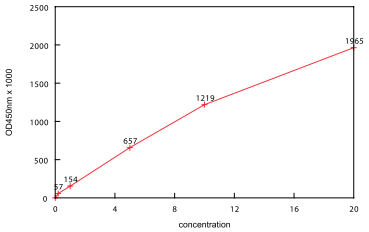
9.1. Calculate the mean absorbance values (OD450) for each pair of calibrators and samples.

9.2. Plot a calibration curve on graph paper: OD versus total TSH concentration.

9.3. Determine the corresponding concentration of total TSH in unknown samples from the calibration curve. Manual or computerized data reduction is applicable on this stage. Point-by-point or linear data reduction is recommended due to non-linear shape of curve.

9.4. Below is presented a typical example of a standard curve with the XEMA Co. Not for calculations!

Calibrators	Value	Absorbance Units (450 nm)
CAL 1	0 mIU/l	0.08
CAL 2	0.2 mIU/l	0.13
CAL 3	1 mIU/l	0.23
CAL 4	5 mIU/l	0.73
CAL 5	10 mIU/l	1.30
CAL 6	20 mIU/l	2.04



10. EXPECTED VALUES

Therapeutical consequences should not be based on results of IVD methods alone – all available clinical and laboratory findings should be used by a physician to elaborate therapeutically measures. Each laboratory should establish its own normal range for TSH. Based on data obtained by XEMA, the following normal range is recommended (see below). NOTE: the patients that have received murine monoclonal antibodies for radioimaging or immunotherapy develop high titered anti-mouse antibodies (HAMA). The presence of these antibodies may cause false results in the present assay. Sera from HAMA positive patients should be treated with depleting adsorbents before assaying.

Sex, age	Units, mIU/l	
	Lower limit	Upper limit
Healthy donors	0.3	4.0

11. PERFORMANCE CHARACTERISTICS

11.1. Analytical specificity / Cross reactivity

Analyte	Cross-reactivity, % wt/wt
HCG	<0.1
LH	<0.1
FSH	<0.1

11.2. Analytical sensitivity. Sensitivity of the assay was assessed as being 0.04 mIU/l.

11.3. Linearity. Linearity was checked by assaying dilution series of 5 samples with different TSH concentrations. Linearity percentages obtained ranged within 90 to 110%.

11.4. Recovery. Recovery was estimated by assaying 5 mixed samples with known TSH concentrations. The recovery percentages ranged from 90 to 110%.

12. LITERATURE

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«УТВЕРЖДЕНА»
Приказ Росздравнадзора № 10004-Пр/10 от 25 октября 2010 г.
КРД № 61704 от 21.09.2010

ИНСТРУКЦИЯ

по применению Набора реагентов для иммуноферментного определения тиреотропного гормона в сыворотке (плазме) крови

«ТТГ-ИФА»

1. НАЗНАЧЕНИЕ.

1.1. Набор реагентов «ТТГ-ИФА» предназначен для количественного определения концентрации тиреотропного гормона (ТТГ) в сыворотке (плазме) крови человека методом твердофазного иммуноферментного анализа.

1.2. Тиреотропный гормон (ТТГ) - гликопротеин с молекулярной массой около 30 кДа, секретируется передней долей гипофиза. Молекула ТТГ состоит из двух нековалентно связанных полипептидных цепей: α- и β-субъединицы. Специфичность и биологическую активность гормона определяет его β -субъединица.

ТТГ вызывает продукцию и выделение щитовидной железой тироксина (Т4) и трийодтиронина (Т3). При увеличении концентрации этих гормонов в сыворотке крови секреция ТТГ ингибируется; наоборот, когда уровень тиреоидных гормонов уменьшается, в гипофизе увеличивается выброс ТТГ и, следовательно, увеличивается производство и выброс гормонов щитовидной железы. Секреция ТТГ подчиняется циркадным (околосуточным) ритмам с акрофазой в ночное время.

Наибольший уровень ТТГ наблюдается в утренние часы (6 часов). Суточные колебания незначительны, однако, если полученные результаты не соответствуют клинической картине и параметрам других исследований, рекомендуется повторное проведение анализа. Показания к определению ТТГ:

1) диагностика нарушений щитовидной железы;

2) гипотиреоз (уровень ТТГ повышается. Диагноз подтверждается низкими концентрациями общего и свободного тироксина и трийодтиронина. При субклиническом легком гипотиреозе, когда уровни Т3 и Т4 в пределах нормы, определение ТТГ является решающим);

3) гипотиреоз (синтез и секреция ТТГ подавлены); оценка адекватности заместительной терапии тироксином;

4) скрининг врожденного гипотиреоза (на пятом дне жизни определяют уровень ТТГ в пятне крови на фильтровальной бумаге или сыворотке крови). Уровень ТТГ повышен при рождении (до 35 мМЕ/л), однако через несколько дней снижается до базального (как у мальчиков, так и у девочек).

Концентрация ТТГ увеличивается во время беременности. Повышенное содержание гормона наблюдается после тяжелых физических нагрузок. Повышенное давление и пониженная температура так же стимулируют секрецию ТТГ. Пониженное содержание ТТГ часто наблюдается у пожилых людей, при хронической почечной недостаточности, циррозе печени, замедленном половом развитии, вторичной аменорее, синдроме Кушинга, акромегалии. Для «захвата» ТТГ на поверхности микропланшет используется моноклональное антитело ХТВ1, специфичное для β-субъединицы. Связавшийся гормон проявляется конъюгированным с ферментом (Fab2)-фрагментом моноклонального антитела против другого эпитопа β-субъединицы (ХТВ2). Данное сочетание антител позволяет свести к минимуму перекрестные реакции с другими гипофизарными гормонами и другие ложноположительные реакции.

1.3. Диагностическая значимость определения.

Определение ТТГ в сыворотке (плазме) крови используется обычно для клинической лабораторной диагностики патологий щитовидной железы различной этиологии.

1.4. Область применения – клиническая лабораторная диагностика.

2. ХАРАКТЕРИСТИКИ НАБОРА

2.1. Принцип работы Набора. Определение основано на использовании «сэндвич»-варианта твердофазного иммуноферментного анализа. На внутренней поверхности лунок планшета иммобилизованы мышиные моноклональные антитела к β-цепи ТТГ человека. В лунках планшета, при добавлении исследуемого образца, происходит связывание ТТГ, содержащегося в образце, с антителами на твердой фазе. Образовавшийся комплекс выявляют с помощью конъюгата (Fab2) фрагмента мышиных моноклональных антител к β-цепи ТТГ человека с пероксидазой хрена. В результате образуется связанный с пластиком «сэндвич», содержащий пероксидазу. Во время инкубации с раствором субстрата тетраметилбензидина (ТМБ) происходит окрашивание растворов в лунках. Интенсивность окраски прямо пропорциональна концентрации ТТГ в исследуемом образце. Концентрацию ТТГ в исследуемых образцах определяют по калибровочному графику зависимости оптической плотности от содержания ТТГ в калибровочных пробах.

2.2. Состав Набора:

планшет 96-луночный полистироловый стрипированный, с иммобилизированными на внутренней поверхности лунок моноклональными антителами к β-цепи ТТГ человека, готов к использованию - 1 шт.;

калибровочные пробы на основе фосфатного буфера, содержащие известные количества ТТГ - 0; 0.2; 1; 5; 10 и 20 мМЕ/л ТТГ; концентрации ТТГ в калибровочных пробах могут несколько отличаться от указанных величин, точные величины указаны на этикетках пробирок (флаконов), готовы к использованию - 6 пробирок или флаконов (калибровочная проба 0 мМЕ/л -2.0 мл, остальные - по 0.8 мл каждая);

конъюгат, готов к использованию - 1 флакон (11 мл);

раствор субстрата тетраметилбензидина (ТМБ), готов к использованию - 1 флакон (11 мл);

контрольная сыворотка на основе сыворотки крови человека с известным содержанием ТТГ, готова к использованию - 1 пробирка или флакон (0.8 мл);

концентрат отмывочного раствора - 1 флакон (22 мл);

стоп-реагент (5.0 % серная кислота), готов к использованию -1 флакон (11 мл);

липкая лента с бумажной подложкой для заклеивания планшета, готова к использованию - 2 шт.

аналитический паспорт;

Инструкция по применению Набора.

3. АНАЛИТИЧЕСКИЕ И ДИАГНОСТИЧЕСКИЕ ХАРАКТЕРИСТИКИ

3.1. Специфичность. Перекрестная реакция мышиных моноклональных антител к β-цепи ТТГ с другими аналитами приведена в таблице:

Аналит	Перекрестная реакция, %
ХГ	<0.1
ЛГ	<0.1
ФСГ	<0.1

3.2. Воспроизводимость. Коэффициент вариации результатов определения содержания ТТГ в одном и том же образце сыворотки (плазмы) крови с использованием Набора «ТТГ-ИФА» не превышает 8.0%.

3.3. Линейность. Зависимость концентрации ТТГ в образцах сыворотки (плазмы) крови при разведении их сывороткой (плазмой) крови, не содержащей ТТГ, имеет линейный характер в диапазоне концентраций 0.2-20 мМЕ/л и составляет + 10.0%.

3.4. Точность. Данный аналитический параметр проверяется тестом на «открытие» ТТГ - соответствие измеренной концентрации ТТГ предписанной, полученной путем смешивания равных объемов контрольной сыворотки и калибровочной пробы 1 мМЕ/л. Процент «открытия» составляет 90-110%.

3.5. Чувствительность. Минимальная достоверно определяемая Набором концентрация ТТГ не превышает 0.08 мМЕ/л.

3.6. Клиническая проверка. Нормальные значения.

Исследуемая группа	Единицы, мМЕ/мл	
	Нижний предел	Верхний предел
Здоровые доноры	0.3	4.0

В соответствии с требованиями GLP (Good Laboratory Practice, Хорошая Лабораторная Практика) рекомендуется в каждой клинико-диагностической лаборатории при использовании Набора реагентов «ТТГ-ИФА» уточнить значения концентрации ТТГ, соответствующие нормаль-ным у обследуемого контингента.

4. МЕРЫ ПРЕДОСТОРОЖНОСТИ

4.1. Потенциальный риск применения Набора - класс 1 (ГОСТ Р 51609-2000).

4.2. Меры предосторожности-соблюдение «Правил устройства, техники безопасности, производственной санитарии, противоэпидемического режима и личной гигиены при работе в лабораториях (отделениях, отделах) санитарно-эпидемиологических учреждений системы Министерства здравоохранения СССР» (Москва, 1981 г.).

5. ОБОРУДОВАНИЕ И МАТЕРИАЛЫ, НЕОБХОДИМЫЕ ПРИ РАБОТЕ С НАБОРОМ

- фотометр вертикального сканирования, позволяющий измерять оптическую плотность раствора в лунках при длине волны 450 нм;
- термостат, поддерживающий температуру +37±0.1 °С;
- дозаторы со сменными наконечниками, позволяющие отбирать объемы жидкости в диапазоне 5.0-250 мкл;
- цилиндр мерный вместимостью 500 мл;
- вода дистиллированная;
- перчатки резиновые или пластиковые;
- бумага фильтровальная.

6. АНАЛИЗИРУЕМЫЕ ОБРАЗЦЫ

ПОДГОТОВКА РЕАГЕНТОВ ДЛЯ АНАЛИЗА.

6.1. Перед проведением анализа компоненты Набора и исследуемые образцы сыворотки (плазмы) крови следует выдержать при комнатной температуре (+18-25 °С) не менее 30 мин.

6.2. Образцы сыворотки (плазмы) крови, используемые для анализа, допускается хранить при температуре +2-8 °С не более 24 ч или при температуре минус 20 °С не более 2 недель.

6.3. Для проведения анализа не следует использовать гемолизированные, мутные образцы сыворотки (плазмы) крови, а также исследуемые образцы, содержащие азид натрия в качестве консерванта.

6.4. При использовании Набора реагентов «ТТГ-ИФА» для проведения нескольких незави-симых серий анализов следует иметь в виду, что для каждого независимого определения необходимо построение нового калибровочного графика; кроме этого, рекомендуется определение ТТГ в контрольной сыворотке.

6.5. Приготовление планшета.

Вскрыть пакет с планшетом и установить на рамку необходимое количество стрипов. Вскрытые стрипы следует использовать в течение 1 ч, длительному хранению не подлежат. Оставшиеся неиспользованными стрипы, чтобы предотвратить воздействие на них влаги, необходимо тщательно заклеить липкой лентой для заклеивания планшета и хранить в упаковке при температуре +2-8 °С в течение всего срока годности Набора.

6.6. Приготовление отмывочного раствора.

Содержимое флакона с концентратом отмывочного раствора перенести в мерный цилиндр вместимостью 500 мл, добавить 440 мл дистиллированной воды и тщательно перемешать.

В случае дробного использования Набора следует отобрать необходимое количество концентрата отмывочного раствора и развести дистиллированной водой в 21 раз (1 объем концентрата + 20 объемов дистиллированной воды).

Приготовленный отмывочный раствор допускается хранить при комнатной температуре (+18-25 °С) не более 2 сут. или при температуре +2-8 °С не более 10 сут.

7. ПРОВЕДЕНИЕ АНАЛИЗА

7.1. Если предполагаемая концентрация ТТГ в исследуемом образце превышает 20 мМЕ/л, его следует дополнительно развести, используя калибровочную пробу 0 мМЕ/л. Использование других буферов и реагентов для разбавления образцов может искажать результаты определения.

7.2. Внести во все лунки по 100 мкл коньюгата.

7.3. Внести в соответствующие лунки в дубликатах по 50 мкл калибровочной пробы и контрольной сыворотки. В остальные лунки внести в дубликатах по 50 мкл исследуемых образцов сыворотки (плазмы) крови.

Внесение образцов в лунки планшета необходимо произвести в течение 5-10 мин.

7.4. Заклеить планшет бумагой для заклеивания планшета и инкубировать его в течение 60 минут при температуре 37 °С.

7.5. По окончании инкубации удалить содержимое лунок аспирацией (например, с помощью водоструйного насоса) или декантированием и промыть лунки планшета 5 раз путем добавления во все лунки по 250 мкл отмывочного раствора. Перемешать содержимое планшета круговыми движениями по горизонтальной поверхности с последующей аспирацией или декантированием. При каждом декантировании необходимо тщательно удалять остатки жидкости из лунок постукиванием планшета в перевернутом положении по фильтровальной бумаге.

7.6. Внести во все лунки планшета по 100 мкл раствора субстрата тетраметилбензидина (ТМБ).

Внесение раствора субстрата тетраметилбензидина (ТМБ) в лунки планшета необходимо произвести в течение 1-2 мин.

Инкубировать планшет в темноте при комнатной температуре (+18-25 °С) в течение 10-20 мин в зависимости от степени развития синего окрашивания.

7.7. Внести во все лунки планшета с той же скоростью и в той же последовательности, как и раствор субстрата тетраметилбензидина (ТМБ), по 100 мкл стоп-реагента; при этом содержимое лунок окрашивается в ярко-желтый цвет.

Внесение стоп-реагента в лунки планшета необходимо произвести в течение 1-2 мин.

8. РЕГИСТРАЦИЯ РЕЗУЛЬТАТОВ

8.1. Измерить величину оптической плотности (ОП) в лунках планшета на фотометре вертикального сканирования при длине волны 450 нм. Измерение ОП растворов в лунках планшета необходимо произвести в течение времени не более 15 мин после внесения стоп- реагента.

9. УЧЕТ РЕЗУЛЬТАТОВ РЕАКЦИИ

9.1. Построить в линейных координатах калибровочный график: ось абсцисс - концентрация ТТГ в калибровочных

пробах (мМЕ/л), ось ординат - оптическая плотность калибровочных проб (ОП450). Для алгоритма обсчета (аппроксимации) калибровочного графика использовать интервальный (кусочно-линейный, «от точки к точке») метод.

9.2. Определить по калибровочному графику содержание ТТГ в исследуемых образцах. Если используемый образец предразводили, умножить полученный результат на фактор разведения.

10. УСЛОВИЯ ХРАНЕНИЯ И ЭКСПЛУАТАЦИИ НАБОРА

10.1. Набор реагентов «ТТГ-ИФА» должен храниться в упаковке предприятия-изготовителя при температуре +2-8 °С в течение всего срока годности (12 мес.).

Допускается хранение (транспортировка) Набора при температуре до +25 °С не более 5 сут.

10.2. Набор рассчитан на проведение анализа в дубликатах 41 неизвестного образца, 6 калибровочных проб и 1 пробы контрольной сыворотки - всего 96 определений при использовании всего комплекта стрипов.

10.3. В случае дробного использования Набора компоненты следует хранить следующим образом:

- вскрытые стрипы следует использовать в течение 1 ч, длительному хранению не подлежат;
- оставшиеся неиспользованными стрипы тщательно заклеить липкой лентой для заклеивания планшета и хранить в упаковке при температуре +2-8 °С в течение всего срока годности Набора;
- коньюгат, раствор субстрата тетраметилбензидина (ТМБ) и стоп-реагент после вскрытия флакона допускается хранить при температуре +2-8 °С не более 2 мес.; при необходимости более длительного хранения - при температуре минус 20 °С в течение всего срока годности Набора;
- приготовленный отмывочный раствор допускается хранить при комнатной температуре (+18-25 °С) не более 5 сут. или при температуре +2-8 °С не более 30 сут.;
- оставшийся неиспользованным концентрат отмывочного раствора допускается хранить при температуре +2-8 °С в течение всего срока годности Набора;

10.4. Для получения надежных результатов необходимо строгое соблюдение Инструкции по применению Набора.

Символ / Symbol	Значение символа / Symbolize
	Производитель / Manufacturer
	Дата производства / Date of manufacture
REF	Номер по каталогу / Catalogue number
LOT	Номер серии / Batch code
 YYYY-MM	Использовать до (год-месяц) / Use By
	Ограничение температуры / Temperature limitation
IVD	Только для ин витро диагностики / In Vitro Diagnostic Medical Device
	Внимание! / Caution, consult accompanying documents
	Не использовать при нарушении целостности упаковки / Do not use if package damaged
SORB MTP	Планшет / EIA strips
CAL	Калибровочные пробы / Calibrator set
CONTROL	Контрольная сыворотка / Control sera
CONJ HRP	Конъюгат / Conjugate
SUBS TMB	Раствор субстрата тетраметилбензидина (ТМБ) / Substrate solution
BUF WASH 26X	Концентрат отмывочного раствора / Washing solution concentrate
STOP	Стоп-реагент / Stop solution
DIL	ИФА-Буфер / EIA buffer

Уважаемый Клиент!
Если в процессе работы с нашими Наборами Вам понадобились пластиковые ванночки для жидких реагентов, одноразовые наконечники для дозаторов или дополнительные объемы реагентов (концентрат отмывочного раствора, ИФА-Буфер, раствор субстрата тетраметилбензидина (ТМБ), стоп-реагент), входящих в состав Набора, просим Вас обратиться к поставщику продукции ООО «ХЕМА» в Вашем регионе.
Все указанные расходные материалы предоставляются бесплатно, в необходимом для проведения анализа количестве.

Номер горячей линии технической поддержки Клиентов:
8 800 505 23 45
Все звонки на номер горячей линии бесплатны для звонящего с любого мобильного или стационарного телефона по всей территории России.

Головной офис в Российской Федерации, г. Москва
ООО «ХЕМА»
Адрес для корреспонденции: 105264, г. Москва, а/я 58
105264, г. Москва, ул. 9-я Парковая, д. 48, 1 под., 5 эт.
+7 495 510-57-07
8 800 505-23-45
sale@xema.ru
www.xema-medica.com

Вопросы сотрудничества на рынках РФ:
Кострикин Дмитрий Сергеевич, кбн
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dmitry.kostrikin@gmail.com
dmitry kostrikin

Вопросы международного сотрудничества (страны ближнего и дальнего зарубежья):
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xemahelp@gmail.com

Instruction for use

ИНСТРУКЦИЯ ПО ПРИМЕНЕНИЮ НАБОРА РЕАГЕНТОВ ДЛЯ ИММУНОФЕРМЕНТНОГО ОПРЕДЕЛЕНИЯ СВОБОДНОГО ТИРОКСИНА В СЫВОРОТКЕ (ПЛАЗМЕ) КРОВИ

«свТ4-ИФА»

A SOLID-PHASE ENZYME IMMUNOASSAY FOR THE QUANTITATIVE DETERMINATION OF FREE THYROXIN IN HUMAN SERUM OR PLASMA

fT4 EIA

НОМЕР ПО КАТАЛОГУ REF **K214**

ТУ №9398-214-18619450-2011

РЕГИСТРАЦИОННОЕ УДОСТОВЕРЕНИЕ
№ ФСР 2011/11006 от 09 июня 2011 года

Антитела к ВИЧ 1,2, вирусу гепатита С и HBsAg отсутствуют
Контрольные сыворотки, входящие в состав набора, инактивированы.

Σ For 96 determinations/На 96 определений

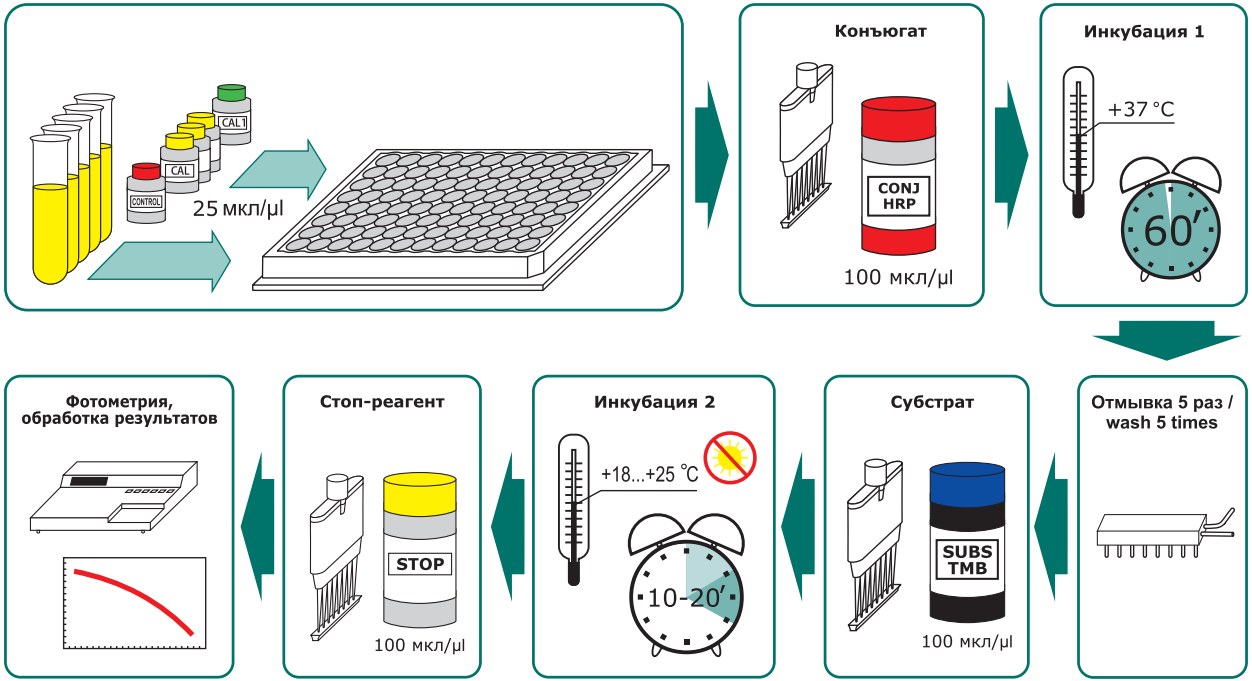
IVD Для *ин витро* диагностики

CE EC REP

XEMA Co., Ltd.
The 9th Parkovaya str., 48
105264 Moscow, Russia
Tel./fax: +7(495) 510-57-07
e-mail: redkin@xema-medica.com
internet: www.xema-medica.com

Authorized Representative in EU:
Polmed.de
Steinacker 20, D-73773
Aichwald, Germany
e-mail: info@polmed.de

Схема проведения анализа / Test procedure



210, 214, 215

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Инструкция составлена Руководителем службы клиентского сервиса ООО «ХЕМА», к. б. н. Д. С. Кострикиным

«УТВЕРЖДАЮ»
Приказ Росздравнадзора № 3275-Пр/11 от 09 июня 2011 г.
КРД № 14067 от 21.04.2011 г.

ИНСТРУКЦИЯ ПО ПРИМЕНЕНИЮ НАБОРА РЕАГЕНТОВ ДЛЯ ИММУНОФЕРМЕНТНОГО ОПРЕДЕЛЕНИЯ СВОБОДНОГО ТИРОКСИНА В СЫВОРОТКЕ (ПЛАЗМЕ) КРОВИ «свТ4-ИФА»

Рекомендована к утверждению Научно-экспертным Советом по медицинским изделиям

1. НАЗНАЧЕНИЕ

1.1. Набор реагентов «свТ4-ИФА» предназначен для количественного определения концентрации свободного тироксина в сыворотке (плазме) крови методом твердофазного иммуноферментного анализа.

1.2. Тироксин (Т4) и 3,5,3'трииодтиронин (Т3) – гормоны, вырабатываемые щитовидной железой и циркулирующие в крови как в свободной, так и в связанной форме – в основном, с тироксинсвязывающим глобулином (ТСГ). Гормональной активностью обладают только свободные Т3 и Т4, однако их доля очень мала: 0.03% от общего содержания для Т4 и 0.3% – для Т3.

1.3. Концентрация Т4 в сыворотке крови – наиболее общепринятый показатель функции щитовидной железы, позволяющий довольно четко разграничивать гипер-, гипо- и эутиреоз.

1.4. Повышение содержания общего Т4 наблюдается при гипертиреозе, при опухолях гипофиза, при состояниях с повышенным уровнем ТСГ (беременность, острый или хронический активный гепатит, эстрогенсекретирующие опухоли или прием эстрогенов, генетически обусловленное повышение), при приеме оральных контрацептивов, героина, метадона, тиреоидных препаратов, ТТГ, тиреолиберина.

1.5. Снижение содержания обшего Т4 наблюдается при гипотиреозе, пангипопитуитаризме, состояниях с пониженным уровнем ТСГ (акромегалия, нефротический синдром, гипопротеинемия, хронические заболевания печени, андрогенсекретирующие опухоли или прием андрогенов, генетически обусловленное снижение), гемолизе, физической нагрузке, при приеме аминосалициловой и ацетилсалициловой кислот, глюкокортикоидов, сульфаниламидов, холестирамина, резерпина, йодида калия, трийодтиронина.

2. ПРИНЦИП РАБОТЫ НАБОРА

Определение свободного тироксина основано на использовании конкурентного иммуноферментного анализа. На внутренней поверхности лунок планшета иммобилизованы мышиные моноклональные антитела к Т4. Свободный тироксин из образца конкурирует с конъюгированным Т4 за связывание с антителами на поверхности лунки. В результате образуется связанный с пластиком «сэндвич», содержащий пероксидазу. Во время инкубации с раствором субстрата тетраметилбензидина (ТМБ) происходит окрашивание растворов в лунках. Интенсивность окраски обратно пропорциональна концентрации свободного тироксина в исследуемом образце. Концентрацию свободного тироксина в исследуемых образцах определяют по калибровочному графику зависимости оптической плотности от содержания свободного тироксина в калибровочных пробах.

3. АНАЛИТИЧЕСКИЕ ХАРАКТЕРИСТИКИ

3.1. Специфичность. Перекрестная реакция мышиных моноклональных антител к Т4 с другими аналитами приведена в таблице:

Аналит	Перекрестная реакция, %
L-тироксин	100
D-тироксин	30
Т3	0.5

3.2. Воспроизводимость.

Коэффициент вариации результатов определения содержания свТ4 в одном и том же образце сыворотки (плазмы) крови с использованием Набора «свТ4-ИФА» не превышает 8.0%.

3.3. Линейность.

Зависимость концентрации свТ4 в образцах сыворотки (плазмы) крови при разведении их сывороткой (плазмой) крови, не содержащей свТ4, имеет линейный характер в диапазоне концентраций 5–100 пмоль/л и составляет ±10.0%.

3.4. Точность.

Данный аналитический параметр проверяется тестом на «открытие» – соответствие измеренной концентрации свТ4 предписанной, полученной путем смешивания равных объемов контрольной сыворотки и калибровочной пробы 10.0 пмоль/л. Процент «открытия» составляет 90–110%.

3.5. Чувствительность.

Минимальная достоверно определяемая Набором «свТ4-ИФА» концентрация свТ4 в сыворотке (плазме) крови не превышает 0.75 пмоль/л.

4. СОСТАВ НАБОРА

	Код компонента	Символ	Наименование	Кол-во	Ед.	Описание
1	P214Z	SORB MTP	**Планшет** 96-луночный полистироловый, стрипированный, готов к использованию	1	шт.	-
2	C214Z	CAL 1–6	**Калибровочные пробы** на основе сыворотки крови человека, содержащие известные количества свободного тироксина - **0**; **5**; **10**; **25**; **50**; **100 пмоль/л**, готовы к использованию (по 0.8 мл каждая)	6	шт.	прозрачные жидкости красного цвета (калибровочная проба 0 – прозрачная бесцветная жидкость)
3	Q214Z	CONTROL	**Контрольная сыворотка** на основе сыворотки крови человека с известным содержанием свободного тироксина, готова к использованию (0.8 мл)	1	шт.	прозрачная бесцветная жидкость
4	T214Z	CONJ HRP	**Конъюгат**, готов к использованию (14 мл)	1	шт.	прозрачная жидкость красного цвета
5	R055Z	SUBS TMB	**Раствор субстрата тетраметилбензидина** (ТМБ),готов к использованию (14 мл)	1	шт.	прозрачная бесцветная жидкость
6	S008Z	BUF WASH 26X	**Концентрат отмывочного раствора** (солевой раствор с твин-20 и бензойной кислотой), 26х-кратный (22 мл)	1	шт.	прозрачная бесцветная жидкость
7	R050Z	STOP	**Стоп-реагент**, готов к использованию (14 мл)	1	шт.	прозрачная бесцветная жидкость
8	N003	-	Бумага для заклеивания планшета	2	шт.	-
9	K214I	-	Инструкция по применению Набора реагентов «свТ4-ИФА»	1	шт.	-
10	K214Q	-	Паспорт контроля качества Набора реагентов «свТ4-ИФА»	1	шт.	-

Комплектация 1: Набор рассчитан на проведение анализа в дубликатах 41 исследуемых образцов, 6 калибровочных проб и 1 пробы контрольной сыворотки (всего 96 определений).

Комплектация 5: Набор рассчитан на проведение анализа в дубликатах 205 исследуемых образцов, 30 калибровочных проб и 5 пробы контрольной сыворотки (всего 480 определений).

	Символ	Комплектация 5
		Количество
1	SORB MTP	5 шт
2	CAL 1 - 6	5 комплектов по 0.8 мл или по 4 мл каждой точки
3	CONTROL	5x0.8 мл или 1x4 мл
4	CONJ HRP	5x14 мл или 2x30 мл
5	SUBS TMB	2x30 мл
6	BUF WASH 26X	2x50 мл
7	STOP	2x30 мл
8	N003	10 шт

5. МЕРЫ ПРЕДОСТОРОЖНОСТИ

5.1. Потенциальный риск применения Набора – класс 2б (ГОСТ Р 51609-2000).

5.2. Все компоненты Набора, за исключением стоп-реагента (5.0% раствор серной кислоты), в используемых концентрациях являются нетоксичными.

Раствор серной кислоты обладает раздражающим действием. Избегать разбрызгивания и попадания на кожу и слизистые. При попадании на кожу и слизистые пораженный участок следует промыть большим количеством проточной воды.

5.3. При работе с Набором следует соблюдать «Правила устройства, техники безопасности, производственной санитарии, противоэпидемического режима и личной гигиены при работе в лабораториях (отделениях, отделах) санитарно-эпидемиологических учреждений системы Министерства здравоохранения СССР» (Москва, 1981 г.).

5.4. При работе с Набором следует надевать одноразовые резиновые или пластиковые перчатки, так как образцы крови человека следует рассматривать как потенциально инфицированный материал, способный длительное время сохранять и передавать ВИЧ, вирус гепатита или любой другой возбудитель вирусной инфекции.

6. ОБОРУДОВАНИЕ И МАТЕРИАЛЫ, НЕОБХОДИМЫЕ ПРИ РАБОТЕ С НАБОРОМ

- фотометр вертикального сканирования, позволяющий измерять оптическую плотность содержимого лунок планшета при длине волны 450 нм;
- термостат, поддерживающий температуру +37 °С ±0.1 °С;
- дозаторы со сменными наконечниками, позволяющие отбирать объемы в диапазоне 25–250 мкл;
- цилиндр мерный вместимостью 1000 мл;
- вода дистиллированная;
- перчатки резиновые или пластиковые;
- бумага фильтровальная.

7. ПОДГОТОВКА РЕАГЕНТОВ ДЛЯ АНАЛИЗА

7.1. Перед проведением анализа компоненты Набора и исследуемые образцы сыворотки (плазмы) крови следует выдержать при комнатной температуре (+18...+25 °С) не менее 30 мин.

7.2. Приготовление планшета.

Вскрыть пакет с планшетом и установить на рамку необходимое количество стрипов. Оставшиеся неиспользованными стрипы, чтобы предотвратить воздействие на них влаги, тщательно заклеить бумагой для заклеивания планшета и хранить при температуре +2...+8 °С в течение всего срока годности Набора.

7.3. Приготовление отмывочного раствора.

Содержимое флакона с концентратом отмывочного раствора (22 мл), перенести в мерный цилиндр вместимостью 1000 мл, добавить 550 мл дистиллированной воды и тщательно перемешать. В случае дробного использования Набора следует отобрать необходимое количество концентрата отмывочного раствора и развести дистиллированной водой в 26 раз (1 мл концентрата отмывочного раствора + 25 мл дистиллированной воды).

8. УСЛОВИЯ ХРАНЕНИЯ И ЭКСПЛУАТАЦИИ НАБОРА

8.1. Набор реагентов «свТ4-ИФА» должен храниться в упаковке предприятия-изготовителя при температуре +2...+8 °С в течение всего срока годности, указанного на упаковке Набора. Допускается хранение (транспортировка) Набора при температуре до +25 °С не более 15 суток. Не допускается замораживание целого набора. **Допускается однократное замораживание (-20 °С) калибровочных проб и контрольной сыворотки в аликвотах.**

8.2. Набор рассчитан на проведение анализа в дубликатах 41 исследуемых образцов, 6 калибровочных проб и 1 пробы контрольной сыворотки (всего 96 определений).

8.3. В случае дробного использования Набора компоненты следует хранить следующим образом:

- оставшиеся неиспользованными стрипы необходимо тщательно заклеить бумагой для заклеивания планшета и хранить при температуре +2...+8 °С в течение всего срока годности Набора;
- конъюгат, субстрат, стоп-реагент после вскрытия флаконов следует хранить при температуре +2...+8 °С в течение всего срока годности Набора;
- калибровочные пробы и контрольную сыворотку после вскрытия флаконов следует хранить при температуре +2...+8 °С не более 2 месяцев;
- оставшийся неиспользованным концентрат отмывочного раствора следует хранить при температуре +2...+8 °С в течение всего срока годности Набора;
- приготовленный отмывочный раствор следует хранить при комнатной температуре (+18...+25 °С) не более 15 суток или при температуре +2...+8 °С не более 45 суток;

Примечание. После использования реагента немедленно закрывайте крышку флакона. Закрывайте каждый флакон своей крышкой.

8.4. Для проведения анализа не следует использовать гемолизированную, мутную сыворотку (плазму) крови, а также сыворотку (плазму) крови, содержащую азид натрия. Если анализ производится не в день взятия крови, сыворотку (плазму) следует хранить при температуре -20 °С. Повторное замораживание-оттаивание образцов сыворотки (плазмы) крови не допускается.

8.5. Исключается использование для анализа образцов сыворотки (плазмы) крови людей, получавших в целях диагностики или терапии препараты, в состав которых входят мышиные антитела.

8.6. При использовании Набора для проведения нескольких независимых серий анализов следует иметь в виду, что для каждого независимого определения необходимо построение нового калибровочного графика; кроме этого, рекомендуется определение концентрации свТ4 в контрольной сыворотке.

8.7. Для получения надежных результатов необходимо строгое соблюдение Инструкции по применению Набора.

8.8. Не используйте компоненты из других наборов или из аналогичных наборов других серий.

9. ПРОВЕДЕНИЕ АНАЛИЗА

1	Поместите в рамку необходимое количество стрипов – исследуемые образцы в 2 повторах и 14 лунок для калибровочных проб и контрольной сыворотки.
2	**Внесите в соответствующие лунки в дубликатах по 25 мкл калибровочной пробы и контрольной сыворотки**. **В остальные лунки внесите в дубликатах по 25 мкл исследуемых образцов сыворотки (плазмы) крови**. Внесение калибровочных проб, контрольной сыворотки и исследуемых образцов необходимо произвести в течение 15 минут.
3	**Внесите во все лунки по 100 мкл конъюгата.**
4	Заклейте планшет бумагой для заклеивания планшета и **инкубируйте** его в течение **60 минут при температуре +37 °С**.
5	По окончании инкубации удалите содержимое лунок и **отмойте лунки 5 раз**. При каждой отмывке добавьте во все лунки по 250 мкл отмывочного раствора (см. п. 7.3), встряхните планшет круговыми движениями по горизонтальной поверхности с последующей аспирацией или декантированием. Задержка при отмывке (замачивание лунок) не требуется. При каждом декантировании необходимо тщательно удалять остатки жидкости из лунок постукиванием планшета в перевернутом положении по фильтровальной бумаге.
6	**Внесите во все лунки по 100 мкл раствора субстрата тетраметилбензидина**. Внесение раствора субстрата тетраметилбензидина в лунки необходимо произвести в течение 2–3 мин. **Инкубируйте планшет в темноте при комнатной температуре (+18...+25°С) в течение 10–20 минут** в зависимости от степени развития синего окрашивания.
7	**Внесите во все лунки** с той же скоростью и в той же последовательности, как и раствор субстрата тетраметилбензидина, **по 100 мкл стоп-реагента**, при этом содержимое лунок окрашивается в ярко-желтый цвет.
8	**Измерьте величину оптической плотности (ОП) содержимого лунок планшета на фотометре** вертикального сканирования **при длине волны 450 нм**. Измерение ОП содержимого лунок планшета необходимо произвести в течение 15 мин после внесения стоп-реагента. Бланк фотометра выставляйте по воздуху.
9	Постройте в полулогарифмических координатах калибровочный график: ось абсцисс (x) – десятичный логарифм концентрации свТ4 в калибровочных пробах (пмоль/л), ось ординат (y) – оптическая плотность калибровочных проб (ОП 450 нм). Для алгоритма обсчета (аппроксимации) калибровочного графика используйте интервальный (кусочно-линейный, «от точки к точке») метод. Приравняйте концентрацию калибровочной пробы 0 пмоль/л к несущественно малой величине, например, 0.001 пмоль/л
10	Определите по калибровочному графику содержание свТ4 в исследуемых образцах.

10. ОЖИДАЕМЫЕ ЗНАЧЕНИЯ И НОРМЫ

10.1. Основываясь на результатах исследований, проведенных ООО «ХЕМА», рекомендуем пользоваться нормами, приведенными ниже. Вместе с тем, в соответствии с правилами *GLP* (Хорошей лабораторной практики), каждая лаборатория должна сама определить параметры нормы, характерные для обследуемой популяции.

Примечание. Значения концентраций свТ4 в исследуемых образцах, находящиеся ниже границы чувствительности Набора (0.75 пмоль/л), а также превышающие значение верхней калибровочной пробы (100 пмоль/л) следует приводить в следующей форме: в исследуемом образце Х концентрация свТ4 ниже 0.75 пмоль/л или выше 100 пмоль/л.

Исследуемая группа	Единицы, пмоль/л	
	Нижний предел	Верхний предел
здоровые доноры		
до 60 лет	10.0	25
старше 60 лет	10.0	21
Беременные:		
1-й триместр	9.0	26
2-й триместр	6.0	21
3-й триместр	6.0	21

11. ЛИТЕРАТУРА

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По вопросам, касающимся качества Набора **«свТ4-ИФА»**,
следует обращаться в ООО «ХЕМА» по адресу:
105043, г. Москва, а/я 58
105264, г. Москва, ул. 9-я Парковая, д. 48, 1-й под., 5 этаж,
тел/факс (495) 737-39-36, 737-00-40, 510-57-07 (многоканальный)
электронная почта: info@xema.ru; rqc@xema.ru
интернет: www.xema.ru; www.xema-medica.com
Руководитель службы клиентского сервиса ООО «ХЕМА»,
к. б. н. Д. С. Кострикин

Instruction for use

A SOLID-PHASE ENZYME IMMUNOASSAY FOR THE QUANTITATIVE DETERMINATION OF FREE THYROXIN IN HUMAN SERUM OR PLASMA

1. INTENDED USE

A solid-phase enzyme immunoassay for the quantitative determination of free thyroxin in blood serum or plasma.

This kit is designed for measurement of free thyroxin in blood serum or plasma. For possibility of use with other sample types, please, refer to Application Notes (on request). The kit contains reagents sufficient for 96 determinations and allows to analyze 41 unknown samples in duplicates.

2. SUMMARY AND EXPLANATION

Thyroid hormones thyroxin (T4) and 3,5,3'-triiodothyronine (T3) exert regulatory influences on growth, differentiation, cellular metabolism and development of skeletal and organ systems. T4 and T3 in blood are found both in free and bound form – mostly, they are bound to thyroxin binding globulin (TBG). Only free forms of T3 and T4 exert hormonal activity also their percentage is very low – 0.3% for T3 and 0.03% for T4.

The concentration of T4 is generally accepted as an index of thyroid function which provide enough information to differentiate between hyper-, hypo- and euthyroidism.

Elevation of total T4 is found in hyperthyroidism, in patients with tumours of pituitary gland, in subjects with elevated TBG level (pregnancy, acute or chronic active hepatitis, estrogen-secreting tumours or estrogen intake, hereditary elevation of TBG), in patients taking oral contraceptives, heroin, methadone, thyroid preparations, TSH, thyroliberin.

Low total T4 is found in hypothyroidism, in patients with panhypopituitarism, in subjects with low TBG level (acromegaly, nephritic syndrome, hypoproteinemia, chronic liver diseases, androgen-secreting tumours, hereditary reduction), in patients taking aminosalicylic and acetylsalicylic acids, cholestyramine, reserpine, potassium iodide, triiodothyronine.

3. PRINCIPLE OF THE TEST

This test is based on competition enzyme immunoassay principle. Tested specimen is placed into the microwells coated by specific murine monoclonal to T4-antibodies simultaneously with conjugated fT4-peroxidase. fT4 from the specimen competes with the conjugated fT4 for coating antibodies. After washing procedure, the remaining enzymatic activity bound to the microwell surface is detected and quantified by addition of chromogen-substrate mixture, stop solution and photometry at 450 nm. Optical density in the microwell is inversely related to the quantity of the measured analyte in the specimen.

4. WARNINGS AND PRECAUTIONS

4.1. For professional use only.

4.2. This kit is intended for in vitro diagnostic use only.

4.3. INFECTION HAZARD: There is no available test methods that can absolutely assure that Hepatitis B and C viruses, HIV-1/2, or other infectious agents are not present in the reagents of this kit. All human products, including patient samples, should be considered potentially infectious. Handling and disposal should be in accordance with the procedures defined by an appropriate national biohazard safety guidelines or regulations.

4.4. Avoid contact with stop solution containing 5.0% H_2SO_4. It may cause skin irritation and burns.

4.5. Wear disposable latex gloves when handling specimens and reagents. Microbial contamination of reagents may give false results.

4.6. Do not use the kit beyond the expiration date.

4.7. All indicated volumes have to be performed according to the protocol. Optimal test results are only obtained when using calibrated pipettes and microplate readers.

4.8. Do not smoke, eat, drink or apply cosmetics in areas where specimens or kit reagents are handled.

4.9. Chemicals and prepared or used reagents have to be treated as hazardous waste according to the national biohazard safety guidelines or regulations.

4.10. Do not mix reagents from different lots.

4.11. Replace caps on reagents immediately. Do not swap caps.

4.12. Do not pipette reagents by mouth.

4.13. Specimens must not contain any AZIDE compounds – they inhibit activity of peroxidase.

4.14. Material Safety Data Sheet for this product is available upon request directly from XEMA Co., Ltd.

4.15. The Material Safety Data Sheet fit the requirements of EU Guideline 91/155 EC.

5. KIT COMPONENTS

5.1. Contents of the Kit

	Symbol	Description		Qty	Units	Colour code	Stability of opened/diluted components
1	SORB MTP	T4 EIA strips, 8x12 wells	polystyrene microwells coated with murine monoclonal to T4	1	pcs		until exp.date
2	CAL 1–6	Calibrator set, 0.8 ml each. The set contains 6 calibrators: 0; 5; 10; 25; 50, 100 pmol/l	human free thyroxin diluted in a preselected human serum preservative – 0.01% Bronidox L, 0.01% 2-Methyl-4-isothiazolin-3-one-hydrochloride; also contains red dye	6	pcs	red (C1 – colourless)	2 months
3	CONTROL	Control serum (0.8 ml)	dilution of preselected human serum, with high content of free thyroxin with preservative – 0.01% Bronidox L, 0.01% 2-Methyl-4-isothiazolin-3-one-hydrochloride, colourless	1	pcs	colourless	2 months
4	CONJ HRP	Conjugate, 14 ml	Aqueous solution of T4 coupled with horseradish peroxidase diluted on phosphate buffered saline with casein from bovine milk and detergent (Tween-20), contains 0.1% phenol as preservative and red dye	1	pcs	red	until exp.date
5	SUBS TMB	Substrate solution, 14 ml	ready-to-use single-component tetramethylbenzidine (TMB) solution.	1	pcs	colourless	until exp.date
6	BUF WASH 26X	Washing solution concentrate 26X, 22 ml	aqueous solution of sodium chloride and detergent (Tween 20), contains proClin300 as a preservative	1	pcs	colourless	Concentrate – until exp.date Diluted washing solution – 45 days at 2-8 °C or 15 days at RT
7	STOP	Stop solution, 14 ml	5.0% vol/vol solution of sulphuric acid	1	pcs	colourless	until exp.date
8	N003	Plate sealing tape		2	pcs		N/A
9	K214I	Instruction fT4 EIA		1	pcs		N/A
10	K214Q	QC data sheet fT4 EIA		1	pcs		N/A

5.2. Equipment and material required but not provided

- Distilled or deionized water;
- Automatic or semiautomatic multichannel micropipettes, 100–250 µl, is useful but not essential;
- Calibrated micropipettes with variable volume, range volume 25–250 µl;
- Calibrated microplate photometer with 450 nm wavelength and OD measuring range 0–3.0.

5.3. Storage and stability of the Kit

Store the whole kit at +2...+8 °C upon receipt until the expiration date.

After opening the pouch keep unused microtiter wells TIGHTLY SEALED BY ADHESIVE TAPE (INCLUDED) to minimize exposure to moisture.

6. SPECIMEN COLLECTION AND STORAGE

This kit is intended for use with serum or plasma (ACD- or heparinized). Grossly hemolytic, lipemic, or turbid samples should be avoided.

Specimens may be stored for up to 48 hours at +2...+8 °C before testing. For a longer storage, the specimens should be frozen at -20 °C or lower. Repeated freezing/thawing should be avoided.

7. TEST PROCEDURE

7.1. Reagent Preparation

- All reagents (including unsealed microstrips) should be allowed to reach room temperature (+18...+25 °C) before use.
- All reagents should be mixed by gentle inversion or vortexing prior to use. Avoid foam formation.
- It is recommended to spin down shortly the tubes with calibrators on low speed centrifuge.
- Prepare washing solution from the concentrate BUF WASH 26X by 26 dilutions in distilled water.

7.2. Procedural Note:

It is recommended that pipetting of all calibrators and samples should be completed within 3 minutes.

7.3. Assay flowchart

See the example of calibration graphic in Quality Control data sheet.

7.4. Assay procedure

1	Put the desired number of microstrips into the frame; allocate 14 wells for the calibrators CAL 1–6 and control samples CONTROL and two wells for each unknown sample. DO NOT REMOVE ADHESIVE SEALING TAPE FROM UNUSED STRIPS.
2	Pipet 25 µl of calibrators CAL 1–6, control samples CONTROL and unknown samples into the wells.
3	Dispense 100 µl of CONJ HRP into the wells. Cover the wells by plate adhesive tape (included into the kit).
4	Incubate 60 minutes at 37 °C.
5	Prepare washing solution by 26X dilution of washing solution concentrate (BUF WASH 26X) by distilled water. Wash the strips 5 times.
6	Dispense 100 µl of SUBS TMB into the wells.
7	Incubate 10–20 minutes at +18...+25 °C.
8	Dispense 100 µl of STOP into the wells.
9	Measure OD (optical density) at 450 nm.
10	Set photometer blank on air.
11	Apply lin-log method for data reduction.

7.5. Handing notes
Calibrators and control sample(s) – only one freezing/thawing cycle is allowed

8. QUALITY CONTROL

It is recommended to use control samples according to state and federal regulations. The use of control samples is advised to assure the day to day validity of results.

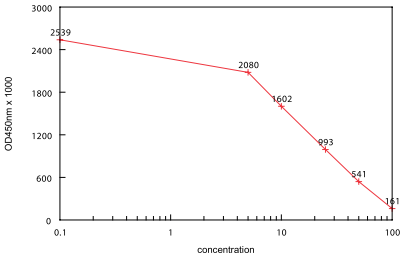
The test must be performed exactly as per the manufacturer's instructions for use. Moreover the user must strictly adhere to the rules of GLP (Good Laboratory Practice) or other applicable federal, state, and local standards and/or laws. This is especially relevant for the use of control reagents. It is important to always include, within the test procedure, a sufficient number of controls for validating the accuracy and precision of the test.

The test results are valid only if all controls are within the specified ranges and if all other test parameters are also within the given assay specifications.

9. CALCULATION OF RESULTS

1. Calculate the mean absorbance values (OD450) for each pair of calibrators and samples.
2. Plot a calibration curve on graph paper: OD versus free thyroxin concentration.
3. Determine the corresponding concentration of free thyroxin in unknown samples from the calibration curve. Manual or computerized data reduction is applicable on this stage. Point-by-point or linear data reduction is recommended due to non-linear shape of curve.
4. Below is presented a typical example of a standard curve with the XEMA Co. Not for calculations!

Calibrators	Value	Absorbance Units (450 nm) x 1000
CAL 1	0 pmol/l	2539
CAL 2	5 pmol/l	2080
CAL 3	10 pmol/l	1602
CAL 4	25 pmol/l	993
CAL 5	50 pmol/l	541
CAL 6	100 pmol/l	161



10. EXPECTED VALUES

Therapeutical consequences should not be based on results of IVD methods alone – all available clinical and laboratory findings should be used by a physician to elaborate therapeutically measures. Each laboratory should establish its own normal range for fT4. Based on data obtained by XEMA, the following normal range is recommended (see below). NOTE: the patients that have received murine monoclonal antibodies for radioimaging or immunotherapy develop high titered anti-mouse antibodies (HAMA). The presence of these antibodies may cause false results in the present assay. Sera from HAMA positive patients should be treated with depleting adsorbents before assaying.

Sex, age	Units, pmol/l	
	Lower limit	Upper limit
Healthy donors		
<60 yrs	10.0	25
>60 yrs	10.0	21
Pregnancy week:		
1st trimester	9.0	26
2nd trimester	6.0	21
3rd trimester	6.0	21

11. PERFORMANCE CHARACTERISTICS

11.1. Analytical specificity / Cross reactivity

Analyte	Cross-reactivity, % wt/wt
L-Thyroxin	100
D-Thyroxin	30
T3	0.5

11.2. Analytical sensitivity

Sensitivity of the assay was assessed as being 0.75 pmol/l.

11.3. Linearity

Linearity was checked by assaying dilution series of 5 samples with different free thyroxin concentrations. Linearity percentages obtained ranged within 90 to 110%.

11.4. Recovery

Recovery was estimated by assaying 5 mixed samples with known free thyroxin concentrations. The recovery percentages ranged from 90 to 110%.

12. LITERATURE

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Символ / Symbol	Значение символа / Symbolize
	Производитель / Manufacturer
	Дата производства / Date of manufacture
REF	Номер по каталогу / Catalogue number
LOT	Номер серии / Batch code
 YYYY-MM	Использовать до (год-месяц) / Use By
	Ограничение температуры / Temperature limitation
IVD	Только для ин витро диагностики / In Vitro Diagnostic Medical Device
	Внимание! / Caution, consult accompanying documents
	Не использовать при нарушении целостности упаковки / Do not use if package damaged
SORB MTP	Планшет / EIA strips
CAL	Калибровочные пробы / Calibrator set
CONTROL	Контрольная сыворотка / Control sera
CONJ HRP	Конъюгат / Conjugate
SUBS TMB	Раствор субстрата тетраметилбензидина (ТМБ) / Substrate solution
BUF WASH 26X	Концентрат отмывочного раствора / Washing solution concentrate
STOP	Стоп-реагент / Stop solution
DIL	ИФА-Буфер / EIA buffer

Уважаемый Клиент!
Если в процессе работы с нашими Наборами Вам понадобились пластиковые ванночки для жидких реагентов, одноразовые наконечники для дозаторов или дополнительные объемы реагентов (концентрат отмывочного раствора, ИФА-Буфер, раствор субстрата тетраметилбензидина (ТМБ), стоп-реагент), входящих в состав Набора, просим Вас обратиться к поставщику продукции ООО «ХЕМА» в Вашем регионе.
Все указанные расходные материалы предоставляются бесплатно, в необходимом для проведения анализа количестве.

Перечень Наборов реагентов для диагностики инфекционных заболеваний производства ООО «ХЕМА»

№ по каталогу	Наименование
K101	«Toxoplasma IgG-ИФА»
K101M	«Toxoplasma IgM-ИФА»
K102	«Rubella IgG-ИФА»
K102M	«Rubella IgM-ИФА»
K103	«Cytomegalovirus IgG-ИФА»
K103M	«Cytomegalovirus IgM-ИФА»
K104	«HSV 1,2 IgG-ИФА»
K104M	«HSV 1,2 IgM-ИФА»
K105	«Chlamydia IgG-ИФА»
K106	«Mycoplasma IgG-ИФА»
K111G	«Сифилис IgG-ИФА»
K111	«Сифилис суммарные антитела-ИФА»
K121	«Aspergillus IgG-ИФА»

Номер горячей линии технической поддержки Клиентов:
8 800 505 23 45
Все звонки на номер горячей линии бесплатны для звонящего с любого мобильного или стационарного телефона по всей территории России.

Ждем Ваших отзывов и предложений по адресам:
Центральный офис ООО «ХЕМА»
Адрес для корреспонденции:
105043, г. Москва, а/я 58
105264, г. Москва, ул. 9-я Парковая, д. 48, 1-й под., 5 этаж
тел.: +7 (495) 510-57 07, 737-39-36;
факс: +7 (495) 737-00-40
e-mail: info@xema.ru
www.xema-medica.com

ФООО «Хема», тел.: +7 (812) 271-24-41
191144, Санкт-Петербург, Дегтярный пер., д. 8-10, литер А
e-mail: spb@xema.ru

СП ООО «Хемма-Тест», тел.: (17) 211-80-39
Офис: 220029, Минск, Проспект Машерова, д. 11,
литер А, корп. 8/К, офис 416
e-mail: hemma-test@yandex.ru

ТОВ «Хема», тел.: (044) 422-62-16;
03179, г. Киев, ул. Академика Ефремова, д. 23;
e-mail: info@xema.com.ua

xemahelp
xemahelp@gmail.com

ФЕДЕРАЛЬНАЯ СЛУЖБА ПО НАДЗОРУ В СФЕРЕ ЗДРАВООХРАНЕНИЯ
(РОСЗДРАВНАДЗОР)

РЕГИСТРАЦИОННОЕ УДОСТОВЕРЕНИЕ НА МЕДИЦИНСКОЕ ИЗДЕЛИЕ

от 07 мая 2019 года № РЗН 2019/8352

На медицинское изделие
Индикаторы химические для контроля процесса паровой и воздушной стерилизации по ТУ 20.59.52-001-35927791-2017

Настоящее регистрационное удостоверение выдано
Общество с ограниченной ответственностью "Научно-Производственное Объединение "Маркер" (ООО "НПО "Маркер"), Россия, 117292, Москва, ул. Профсоюзная, д. 26/44

Производитель
Общество с ограниченной ответственностью "Научно-Производственное Объединение "Маркер" (ООО "НПО "Маркер"), Россия, 117292, Москва, ул. Профсоюзная, д. 26/44

Место производства медицинского изделия
ООО «НПО Маркер», Россия, 300013, г. Тула, Привокзальный р-н, ул. Болдина, д. 98а, лит. Е

Номер регистрационного досье **№ РД-25642/72833 от 30.01.2019**

Класс потенциального риска применения медицинского изделия **1**

Код Общероссийского классификатора продукции по видам экономической деятельности **32.50.50.000**

Настоящее регистрационное удостоверение имеет приложение на 2 листах

приказом Росздравнадзора от 07 мая 2019 года № 3413
допущено к обращению на территории Российской Федерации

Врио руководителя Федеральной службы по надзору в сфере здравоохранения **Д.В. Пархоменко**

0039607

ФЕДЕРАЛЬНАЯ СЛУЖБА ПО НАДЗОРУ В СФЕРЕ ЗДРАВООХРАНЕНИЯ
(РОСЗДРАВНАДЗОР)

ПРИЛОЖЕНИЕ
К РЕГИСТРАЦИОННОМУ УДОСТОВЕРЕНИЮ
НА МЕДИЦИНСКОЕ ИЗДЕЛИЕ

от 07 мая 2019 года **№ РЗН 2019/8352**

На медицинское изделие
Индикаторы химические для контроля процесса паровой и воздушной стерилизации по ТУ 20.59.52-001-35927791-2017, в вариантах исполнения:
1. Индикаторы химические для контроля процесса паровой и воздушной стерилизации, в составе:
1.1. Интегрирующий индикатор «Маркер», 5 класс для контроля процесса паровой и воздушной стерилизации.
1.2. Многопеременный индикатор «ХимТест», 4 класс для контроля параметров паровой стерилизации для режимов: 121 °С /20 мин, 126 °С /10 мин, 134 °С /5 мин.
1.3. Многопеременный индикатор «ХимТест», 4 класс для контроля параметров воздушной стерилизации для режимов: 160 °С /150 мин, 180 °С /60 мин, 200 °С /30 мин.
1.4. Имитирующий индикатор «Маркер-Прион», 6 класс для контроля параметров паровой стерилизации для режима: 134 °С /18 мин.
2. Индикаторы химические для контроля процесса паровой и воздушной стерилизации лекарственных средств, в составе:
2.1. Многопеременный индикатор «Маркер-Фарм», 4 класс для контроля параметров паровой и воздушной стерилизации для режимов: 100 °С /30 мин, 110 °С /20 мин, 120 °С /15 мин, 180 °С /30 мин.
2.2. Многопеременный индикатор «ХимТест-Фарм-1», 4 класс для контроля параметров паровой стерилизации для режимов: 100 °С /15 мин, 110 °С /10 мин, 120 °С /8 мин.
2.3. Многопеременный индикатор «ХимТест-Фарм-2», 4 класс для контроля параметров паровой стерилизации для режимов: 110 °С /15 мин, 120 °С /12 мин.
2.4. Многопеременный индикатор «ХимТест-Фарм-3», 4 класс для контроля параметров паровой стерилизации для режимов: 100 °С /30 мин, 110 °С /20 мин, 120 °С /15 мин.
2.5. Многопеременный индикатор «ХимТест-Фарм-4», 4 класс для контроля параметров паровой стерилизации для режимов: 112 °С /20 мин, 121 °С /15 мин.
2.6. Многопеременный индикатор «ХимТест-Фарм-5», 4 класс для контроля параметров паровой стерилизации для режимов: 120 °С /30 мин, 121 °С /20 мин.
2.7. Многопеременный индикатор «ХимТест-Фарм-6», 4 класс для контроля параметров паровой стерилизации для режима: 120 °С /30 мин.
2.8. Многопеременный индикатор «ХимТест-Фарм-7», 4 класс для контроля

Врио руководителя Федеральной службы
по надзору в сфере здравоохранения **Д.В. Пархоменко**

0055896

ФЕДЕРАЛЬНАЯ СЛУЖБА ПО НАДЗОРУ В СФЕРЕ ЗДРАВООХРАНЕНИЯ
(РОСЗДРАВНАДЗОР)

ПРИЛОЖЕНИЕ
К РЕГИСТРАЦИОННОМУ УДОСТОВЕРЕНИЮ
НА МЕДИЦИНСКОЕ ИЗДЕЛИЕ

от 07 мая 2019 года **№ РЗН 2019/8352**

параметров воздушной стерилизации для режима: 180 °С /30 мин.
2.9. Многопеременный индикатор «ХимТест-Фарм-8», 4 класс для контроля параметров воздушной стерилизации для режима: 180 °С /45 мин.
3. Индикаторы химические для контроля процесса стерилизации (парового обеззараживания) медицинских отходов, в составе:
3.1. Многопеременный индикатор «ХимТест-О-1», для контроля параметров парового обеззараживания для режимов: 120 °С /90 мин, 126 °С /60 мин, 132 °С /45 мин, 134 °С /27 мин.
3.2. Многопеременный индикатор «ХимТест-О-2», для контроля параметров парового обеззараживания для режимов: 120 °С /120 мин, 126 °С /90 мин, 132 °С /60 мин, 134 °С /35 мин.
3.3. Многопеременный индикатор «ХимТест-О-3», для контроля параметров парового обеззараживания для режимов: 132 °С /90 мин, 134 °С /60 мин.

Врио руководителя Федеральной службы по надзору в сфере здравоохранения **Д.В. Пархоменко**

0055897

ООО «Научно-Производственное Объединение Маркер»
ИНН: 7728890217
КПП: 772801001
ОГРН: 5147746104182
117292. г. Москва, ул. Профсоюзная, д. 26/44
тел.: +7 (495) 178-02-08; e-mail: info@npomarker.ru

Индикаторы химические для контроля процесса паровой и воздушной стерилизации
ТУ 20.59.52-001-35927791-2017

ПАСПОРТ

03.03.2020

Индикаторы химические для контроля процесса паровой и воздушной стерилизации:
многопеременный индикатор «ХимТест», 4 класс для контроля параметров воздушной стерилизации для режимов: 160 °С /150 мин, 180 °С /60 мин, 200 °С /30 мин;

Партия № **2503/2**
Дата изготовления: **март 2020 г.**
Годен до: **март 2025 г.**
Вид исполнения: **листы с индикаторами**

Результаты приемосдаточных испытаний

Наименование испытаний (проверок)	№№ пунктов ТУ (технических требований)	Результат испытаний
Проверка соответствия комплекту документации	1.1.1	соответствует
Проверка исполнений, общего внешнего вида, конструкции, формы, материалов, основных размеров, массы	1.2.1-1.2.3	соответствует
Проверка условий достижения конечного состояния	1.2.4, 1.2.5	соответствует
Проверка условий не достижения конечного состояния	1.2.6	соответствует
Проверка комплектности, маркировки и упаковки	1.3, 1.4, 1.5	соответствует

Генеральный директор ООО «НПО Маркер» И.П. Антонова

STATEMENT

We, ACON Laboratories, Inc., having a registered office at *5850 Oberlin Drive #340, San Diego, CA 92121* authorize SRL Sanmedico having a registered office at *A. Corobceanu street 7A, apt. 9, Chisinău, MD-2012, Moldova*

to register, notify, renew or modify the registration of medical devices on the territory of the Republic of Moldova.

Date: January 3, 2023

Signature: 

Qiyi Xie, Md, MPH
Sr. Officer, Regulatory & Clinical Affairs
ACON Laboratories, Inc.
Ph: 858-875-8011
Email: qxie@aconlabs.com

ZERTIFIKAT ◆ CERTIFICATE ◆ 認證證書 ◆ СЕРТИФИКАТ ◆ CERTIFICADO ◆ CERTIFICAT

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ZLG-BS-245.10.07

Product Service

EC Certificate

Full Quality Assurance System
Directive 98/79/EC on In Vitro Diagnostic Medical Devices (IVDD), Annex IV excluding (4, 6)
(List A and B and devices for self-testing)

No. V1 104507 0003 Rev. 06

Manufacturer: **ACON Laboratories, Inc.**
5850 Oberlin Drive, #340
San Diego CA 92121
USA

Product Category(ies): **Blood glucose measuring systems for self testing and self-testing devices for clinical chemistry, hematology and pregnancy and ovulation**

The Certification Body of TÜV SÜD Product Service GmbH declares that the aforementioned manufacturer has implemented a quality assurance system for design, manufacture and final inspection of the respective devices / device families in accordance with IVDD Annex IV. This quality assurance system conforms to the requirements of this Directive and is subject to periodical surveillance. For marketing of List A devices an additional Annex IV (4) certificate is mandatory. All applicable requirements of the testing and certification regulation of TÜV SÜD Group have to be complied with. For details and certificate validity see: www.tuvsud.com/ps-cert?q=cert:V1 104507 0003 Rev. 06

Report no.: SH22743EXT01

Valid from: 2022-05-04
Valid until: 2025-05-26

Date, 2022-05-04

Christoph Dicks
Head of Certification/Notified Body

TÜV SÜD Product Service GmbH is Notified Body with identification no. 0123

TÜV SÜD Product Service GmbH • Certification Body • Ridlerstraße 65 • 80339 Munich • Germany

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ZLG-BS-245.10.07

Product Service

EC Certificate

Full Quality Assurance System
Directive 98/79/EC on In Vitro Diagnostic Medical Devices (IVDD), Annex IV excluding (4, 6)
(List A and B and devices for self-testing)

No. V1 104507 0003 Rev. 06

Model(s):

On Call Plus Blood Glucose Monitoring System,
On Call Plus Blood Glucose Test Strips,
On Call EZ II Blood Glucose Monitoring System,
On Call Advanced Blood Glucose Monitoring System,
On Call Advanced Blood Glucose Test Strips,
On Call Chosen Blood Glucose Test Strips,
On Call Vivid Blood Glucose Monitoring System (OGM-101),
On Call Vivid Blood Glucose Test Strips (OGS-101),
On Call Sharp Blood Glucose Monitoring System (OGM-121),
On Call Sharp Blood Glucose Test Strips (OGS-121)
On Call Plus II Blood Glucose Monitoring System (OGM-171),
On Call Plus II Blood Glucose Test Strips (OGS-171),
On Call Extra Blood Glucose Monitoring System (OGM-191),
On Call Extra Blood Glucose Test Strips (OGS-191),
On Call GK Dual Blood Glucose & Ketone Monitoring System (OGM-161),
On Call Blood Ketone Test Strips (OGS-161),
Urinalysis Reagent Strips (Urine),
UTI Urinary Tract Infection Test Strips,
Cholesterol Monitoring System (CCM-111),
CHOL Total Cholesterol Test Devices (CCS-111),
TRIG Triglycerides Test Devices (CCS-112),
HDL High Density Lipoprotein Test Devices (CCS-113),
3-1 Lipid Panel Test Devices (CCS-114),
Cholesterol CTRL Control Devices,
Cholesterol Monitoring System (CCM-101),
CHOL Total Cholesterol Test Strips (CCS-101),
PT/INR Monitoring System (CCM-151),
PT/INR Test Strips (CCS-151),
Hemoglobin Testing System (CCM-141),
Hemoglobin Test Strips (CCS-141),
hCG Pregnancy Rapid Test Cassette (Urine),
Pregnancy Rapid Test Midstream,
On Call Extra Mobile Blood Glucose Monitoring System (OGM-281),
On Call Sure Blood Glucose Monitoring System (OGM-211),
On Call Sure Sync Blood Glucose Monitoring System (OGM-212),
On Call Sure Blood Glucose Test Strips (OGS-211),
GIMA Blood Glucose Monitoring System,
GIMA Bluetooth Blood Glucose Monitoring System,
GIMA Blood Glucose Test Strips,
On Call GU Dual Blood Glucose & Uric Acid Monitoring

TÜV SÜD Product Service GmbH is Notified Body with identification no. 0123

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Zentralstelle der Länder
für Gesundheitsschutz
bei Arzneimitteln und
Medizinprodukten
www.zlg.de
ZLG-BS-245.10.07

Product Service

EC Certificate

Full Quality Assurance System
Directive 98/79/EC on In Vitro Diagnostic Medical Devices (IVDD), Annex IV excluding (4, 6)
(List A and B and devices for self-testing)

No. V1 104507 0003 Rev. 06

System (OGM-201),
On Call Blood Uric Acid Test Strips (OGS-201),
LH Ovulation Rapid Test Cassette (Urine),
Ovulation Rapid Test Midstream,
Ovulation & Pregnancy Test Combo Pack,
On Call Extra Voice Blood Glucose Monitoring System (OGM-291),
Early Detection Pregnancy Test,
Digital Pregnancy Test,
Go-Keto Blood Glucose & Ketone Monitoring System (OGM-161),
Go-Keto Blood Ketone Test Strips (OGS-161),
Go-Keto Blood Glucose Test Strips,
On Call Extra GM Blood Glucose Monitoring System(OGM-191),
On Call Extra GM Blood Glucose Test Strips (OGS-191),
On Call Plus GM Blood Glucose Monitoring System,
On Call Plus GM Blood Glucose Test Strips,
Go-Keto Urinalysis Reagent Strips

Facility(ies):

ACON Laboratories, Inc.
5850 Oberlin Drive, #340, San Diego CA 92121, USA

ACON Laboratories, Inc.
10125 Mesa Rim Road, San Diego CA 92121, USA

AZURE Institute, Inc.
10125 Mesa Rim Road, San Diego CA 92121, USA

Acon Laboratories Inc.
Guerrero Negro 9942 Parque Industrial Pacifico IV, 22644 Tijuana B.C. CP, MEXICO

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TÜV SÜD Product Service GmbH is Notified Body with identification no. 0123

TÜV SÜD Product Service GmbH • Certification Body • Ridlerstraße 65 • 80339 Munich • Germany

TÜV®

Declaration of Conformity

ACON Laboratories, Incorporated
5850 Oberlin Drive #340
San Diego, CA 92121, USA

We, the manufacturer, declare under our sole responsibility that the *in vitro* diagnostic device:

Mission® Urinalysis Reagent Strips (U031-XX1)

classified as Others in the directive 98/79/EC,

meets all the provisions of the directive 98/79/EC on *in vitro* diagnostic medical devices which apply to it

The self-declaration is according to Annex III (excluding Section 6) of the Directive.

Authorized Representative:
Medical Device Safety Service GmbH
Schiffgraben 41
30175 Hannover, Germany

Signed this 11 day of February, 2020
in San Diego, CA USA

Qiyi Xie, MD, MPH
Senior Staff, Regulatory Affairs & Clinical Affairs
Acon Laboratories, Inc.

ZERTIFIKAT ◆ CERTIFICATE ◆ 認證證書 ◆ СЕРТИФИКАТ ◆ CERTIFICADO ◆ CERTIFICAT

DAkkS Deutsche Akkreditierungsstelle D-ZM-11321-01-00

Product Service

Certificate

No. Q5 104507 0001 Rev. 03

Holder of Certificate: **ACON Laboratories, Inc.**
5850 Oberlin Drive, #340
San Diego CA 92121
USA

Certification Mark:

Scope of Certificate: **Design and Development, Manufacture and distribution of In Vitro Diagnostic Test Kits and Reagents for the Determination of Infectious Diseases, Clinical Chemistry, Drugs of Abuse, Tumor/Cardiac Marker, Fertility/Pregnancy and Blood Glucose Monitoring System, Lancing Devices and Lancets**

The Certification Body of TÜV SÜD Product Service GmbH certifies that the company mentioned above has established and is maintaining a quality management system, which meets the requirements of the listed standard(s). All applicable requirements of the testing and certification regulation of TÜV SÜD Group have to be complied with. For details and certificate validity see: www.tuvsud.com/ps-cert?q=cert:Q5 104507 0001 Rev. 03

Report No.: SH22743A01

Valid from: 2022-09-15
Valid until: 2025-09-06

Date, 2022-09-15

Christoph Dicks
Head of Certification/Notified Body

TÜV SÜD Product Service GmbH • Certification Body • Ridlerstraße 65 • 80339 Munich • Germany

DAkkS Deutsche Akkreditierungsstelle D-ZM-11321-01-00

TÜV SÜD Product Service

Certificate

No. Q5 104507 0001 Rev. 03

Applied Standard(s):

EN ISO 13485:2016
Medical devices - Quality management systems - Requirements for regulatory purposes
(ISO 13485:2016)
DIN EN ISO 13485:2016

Facility(ies):

ACON Laboratories, Inc.
5850 Oberlin Drive, #340, San Diego CA 92121, USA

Address holder for registration only

ACON Laboratories, Inc.
10125 Mesa Rim Road, San Diego CA 92121, USA

Manufacture and distribution of
In Vitro Diagnostic Test Kits and Reagents for the Determination of Infectious Diseases, Clinical Chemistry, Drugs of Abuse, Tumor/Cardiac Marker, Fertility/Pregnancy and Blood Glucose Monitoring System, Lancing Devices and Lancets

ACON Laboratories, Inc.
6865 Flanders Dr., Suite B, San Diego CA 92121, USA

Storage of
In Vitro Diagnostic Test Kits and Reagents for the Determination of Infectious Diseases, Clinical Chemistry, Drugs of Abuse, Tumor/Cardiac Marker, Fertility/Pregnancy and Blood Glucose Monitoring System, Lancing Devices and Lancets

AZURE Institute, Inc.
10125 Mesa Rim Road, San Diego CA 92121, USA

Design and Development of
In Vitro Diagnostic Test Kits and Reagents for the Determination of Infectious Diseases, Clinical Chemistry, Drugs of Abuse, Tumor/Cardiac Marker, Fertility/Pregnancy and Blood Glucose Monitoring System, Lancing Devices and Lancets

Acon Laboratories Inc.
Guerrero Negro 9942 Parque Industrial Pacifico IV, 22644
Tijuana B.C. CP, MEXICO

Manufacture of
blood glucose test strips, antigen rapid test and IgG/IgM antibody rapid test for infectious disease.

.

TÜV SÜD Product Service GmbH • Certification Body • Ridlerstraße 65 • 80339 Munich • Germany

TÜV®

Atlas Medical

Declaration Ref No: DC22-0015

Date : 13.05.2022

CE Declaration of Conformity

We,

Atlas Medical GmbH
Head office: Ludwig-Erhard-Ring 3
15827 Blankenefelde-Mahlow Germany
Tel: +49(0)33708355030
Email: info@atlas-site.com

Middle East Site: : Sahab Industrial Zone Area, King Abdullah II Industrial City
Amman 11512, Jordan
Tel.: +962 6 4026468
Fax: +962 6 4022588
Email: info@atlas-medical.com

Declare our responsibility that the following product:

Blood Grouping Reagents:

(Anti-A Monoclonal Reagent, Anti-B Monoclonal Reagent , Anti-AB Monoclonal Reagent and Anti-D IgG/IgG blend Reagent)

see the attached list of variants

That are classified as Annex II, list A

Is produced under Atlas quality system (ISO13485: 2016) supported by GMED certificate and complies with the essential requirements of

In Vitro Diagnostic Medical Devices Directive 98/79/EC

And

EN ISO 18113-1, -2 :2011, EN ISO 15223:2016
EN ISO 14971:2019, EN ISO 23640 :2015 , ISO 2859 :2017,
EN 13612:2002, EN 13641:2002 , EN 13975:2003,
EN ISO 13485:2016, EN 62366-1:2020

And

Intended for In-Vitro Professional use only.

Conformity Assessment Route:

Annex IV.3 –Approval full Quality Assurance System.
Annex IV.4-EC Design Examination (of the product)

Notified Body:

G-MED	CE	0459

GMED, Laboratoire national de métrologie et d'essais
1 rue Gaston Boissier 75015 Paris
Tél. : 01 40 43 37 00 , TVA:FR 28 839 022 522

EC Certificates No.:

- **CE Certificate of Approval full Quality Assurance System: 33540 rev4.**
- **CE Certificate Of EC Design Examination: 33544 rev3.**

Atlas Medical GmbH	Start of CE Marking	Date of expiry	Name & Position	Signature	MRXDO10F.11 21.10.2013
	09th october 2017	26th May 2025	Amani Al-habahbeh (RA Manager)	Amani	

Atlas Medical

Atlas Medical

Declaration Ref No: DC22-0015

Date : 13.05.2022

Product Code	Product Name	GMDN Code
8.02.00.0.0010	Anti-A Monoclonal Reagent (Titer: 1/512), 10ml/vial, 1 vial/Carton Box	52532
8.02.00.1.0100	Anti-A Monoclonal Reagent (Titer: 1/512), 10ml/vial. 10 vials / Plastic Pack	52532
8.02.00.1.0180	Anti-A Monoclonal Reagent (Titer: 1/512), 10ml/vial. 18 vials / Carton Box	52532
8.02.01.0.0010	Anti-B Monoclonal Reagent (Titer: 1/512), 10ml/vial, / Carton Box	52538
8.02.01.1.0100	Anti-B Monoclonal Reagent (Titer: 1/512), 10ml/vial, 10 vials / Plastic Pack	52538
8.02.01.1.0180	Anti-B Monoclonal Reagent (Titer: 1/512), 10ml/vial, 18 vials / Carton Box	52538
8.02.02.0.0010	Anti-AB Monoclonal Reagent (Titer: 1/512), 10ml/vial, 1 vial/ Carton Box	46442
8.02.02.1.0100	Anti-AB Monoclonal Reagent (Titer: 1/512), 10ml/vial, 10 vials/Plastic Pack	46442
8.02.02.1.0180	Anti-AB Monoclonal Reagent (Titer: 1/512), 10ml/vial, 18 vials/Carton Box	46442
8.02.03.0.0010	Anti-D IgG/IgM Blend Reagent (Titer: 1/128), 10ml/vial, 1 vial/ Carton Box	52647
8.02.03.1.0100	Anti-D IgG/IgM Blend Reagent (Titer: 1/128), 10ml/vial, 10 vials / Plastic Pack	52647
8.02.03.1.0180	Anti-D IgG/IgM Blend Reagent (Titer: 1/128), 10ml/vial, 18 vials / Carton Box	52647
8.02.04.0.0010	Anti-A Monoclonal Reagent (Titer: 1/256), 10ml/vial, 1 Vial/Carton Box	52532
8.02.04.0.0100	Anti-A Monoclonal Reagent (Titer: 1/256), 10ml/vial, 10 vials / Plastic Pack	52532
8.02.05.0.0010	Anti-B Monoclonal Reagent (Titer: 1/256), 10ml/vial, 1vial/Carton Box	52538
8.02.05.0.0100	Anti-B Monoclonal Reagent (Titer: 1/256), 10ml/vial, 10 vials /Plastic Pack	52538
8.02.05.6.0030	ABO Set (Anti-A (1/256), Anti-B (1/256), Anti-D (1/64)),3x10ml / plastic Pack	45308
8.02.05.7.0020	ABO Set: Anti-A (1/256), Anti-B (1/256), 2x10ml /Plastic Pack	52695
8.02.06.0.0010	Anti-AB Monoclonal Reagent (Titer: 1/256), 10ml/vial, 1vial/Carton Box	46442
8.02.06.1.0100	Anti-AB Monoclonal Reagent (Titer: 1/256), 10ml/vial,10 vials /Plastic Pack	46442
8.02.06.1.0180	Anti-AB Monoclonal Reagent (Titer: 1/256), 10ml/vial,18 vials / Carton Box	45308
8.02.07.0.0010	Anti-D IgG/IgM Blend Reagent (Titer: 1/64), 10ml/vial, 1Vial/ Carton Box	52647
8.02.07.1.0100	Anti-D IgG/IgM Blend Reagent (Titer: 1/64), 10ml/vial, 10 vials / Plastic Pack	52647

Atlas Medical GmbH	Start of CE Marking	Date of expiry	Name & Position	Signature	MRXDO10F.11 21.10.2013
	09th october 2017	26th May 2025	Amani Al-habahbeh (RA Manager)		

Atlas Medical
Quality Diagnostic Products

Atlas Medical

Declaration Ref No: DC22-0015

Date : 13.05.2022

8.02.47.0.0030	ABO Set (Anti-A (1/512), Anti-B (1/512), Anti-D (1/128)),3x10ml/Plastic Pack	45308
8.02.47.1.0030	ABO Set (Anti-A (1/256), Anti-B (1/256), Anti-D (1/64)), 3x10ml /Carton Box.	45308
8.02.47.3.0030	ABO Set (Anti-A (1/256), Anti-B (1/256), Anti-D (1/64)), 3x10ml /Plastic Pack	45308
8.02.47.5.0030	ABO Set (Anti-A (1/256), Anti-B (1/256), Anti-D (1/128)), 3x10ml/Plastic Pack	45308
8.02.49.0.0040	ABO Set (Anti-A (1/256), Anti-B (1/256), Anti-AB (1/256), Anti-D (1/64)), 4x10ml/Carton Box	45308
8.02.49.2.0040	ABO Set (Anti-A (1/256), Anti-B (1/256), Anti-AB (1/256), Anti-D (1/128)), 4 x 10ml, 4 vials/Plastic Pack	45308
8.02.53.0.0040	ABO Set (Anti-A (1/512), Anti-B (1/512), Anti-AB (1/512) Anti-D (1/128)), 4x10ml/Plastic Pack	45308
8.02.53.1.0040	ABO Set (Anti-A (1/512), Anti-B (1/512), Anti-AB (1/512) Anti-D (1/128)), 4x10ml, 4vials/Plastic Pack	45308
8.02.70.0.0010	Anti-A monoclonal reagent , Titer (1/1024), 10 ml/vial, 1Vial/ Carton Box	52532
8.02.71.0.0010	Anti-B Monoclonal reagent (Titer: 1/1024) , 10 ml/vial ,1Vial/ Carton Box	52538
8.02.72.0.0010	Anti-AB Monoclonal reagent (Titer: 1/1024) , 10 ml/vial , 1Vial/ Carton Box	45308
8.02.85.0.0010	Anti-D IgG/IgM Blend Reagent , Titer 1/256, 10ml/vial, 1Vial/ Carton Box	52647

Atlas Medical
Quality Diagnostic Products

Atlas Medical GmbH	Start of CE Marking	Date of expiry	Name & Position	Signature	MRXDO10F.11 21.10.2013
	09th october 2017	26th May 2025	Amani Al-habahbeh (RA Manager)		

Declaration Ref No: DC21-0194

Date: 06.09.2021

CE Declaration of Conformity

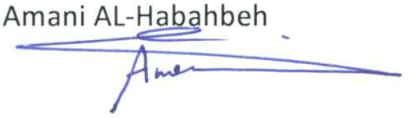
Name and address of Manufacturer	**Atlas Medical GmbH** Ludwig-Erhard-Ring 3, 15827 Blankenfelde-Mahlow Germany . Tel: +49(0)33708355030 Email: info@atlas-medical.com

Atlas Medical GmbH declared our his own responsibility that the following IVD medical devices:

Product Code	Product Name	GMDN code
8.00.19.0.0050	Atlas TPHA Kit , 50 Tests	51819
8.00.19.0.0100	Atlas TPHA Kit , 100 Tests	51819
8.00.19.0.0200	Atlas TPHA Kit , 200 Tests	51819

Meets the essential requirments of In Vitro Diagnostic Medical Devices Directive 98/79/EC Annex I
And
EN ISO 13485 :2016 , EN 18113-1, -2,:2011, EN ISO 15223:2016
EN ISO 14971:2019, EN ISO 23640:2015, ISO 2859/1:1999,
EN ISO 13612:2002, EN ISO 13641:2002 , EN ISO 62366-1+A1:2020.

IVD Categorization	Directive 98/79, Other IVDs (Non-annex II, non-self-test).
Conformity Assesment Route	Directive 98/79/EC , Annex III.
Name , Address and Identification number of notified body	N/A

Date of issuance:	06.September.2021
Place	Atlas Medical GmbH
Signed by: **Position :**	Amani AL-Habahbeh  Regulatory Affairs Manager

Atlas Medical GmbH
Ludwig - Erhard Ring 3
15827 Blankenfelde - Mahlow
Tel. (0049) 33708 - 355030

Atlas Medical

Declaration Ref No: DC21-0193

CE Declaration of Conformity

We,

Atlas Medical GmbH

Head office: Ludwig-Erhard-Ring 3

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Email: info@atlas-medical.com

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Amman 11512, Jordan

Tel.: +962 6 4026468

Fax: +962 6 4022588

Email: info@atlas-medical.com

Declare our responsibility that the following product:

Product Code	Product Name	Class	GMDN code
8.00.18.0.0005	RPR Carbon Antigen Reagent, 5 ml/vial	General-IVD	32450
8.00.18.2.1000	RPR Carbon Antigen 1000ml/bottle	General-IVD	32450
8.00.18.0.0050	RPR Carbon Antigen Kit, 50 Tests	General-IVD	32450
8.00.18.1.0050	RPR Carbon Antigen Kit, 50 Tests, White Glass Slide.	General-IVD	32450
8.00.18.2.0500	RPR Carbon Antigen Kit, 500 Tests (2ml latex, 2x0.5 ml control) Without card.	General-IVD	32450
8.00.18.3.0500	RPR Carbon Antigen Kit, 500 Tests (10ml latex, 2x0.5 ml control) Without card, stirring sticks.	General-IVD	32450
8.00.18.0.0100	RPR Carbon Antigen Kit, 100 Tests (2ml latex, 2x0.5 ml control)	General-IVD	32450
8.00.18.2.0100	RPR Carbon Antigen Kit, 100 Tests (2ml latex, 2x0.5 ml control +White Glass slide stirring sticks)	General-IVD	32450
8.00.18.0.0025	RPR Carbon Antigen Kit, 25 Tests (0.5ml latex, 2x0.5 ml control)	General-IVD	32450
8.00.18.0.0150	RPR Carbon Antigen Kit, 150 Tests	General-IVD	32450
8.00.18.0.0200	RPR Carbon Antigen Kit, 200 Tests	General-IVD	32450
8.00.18.0.0250	RPR Carbon Antigen Kit, 250 Tests	General-IVD	32450

Atlas Medical Quality Products

Atlas Medical	First issue date	Date of review	Management approval	MRXDO10F.10 08.02.2011
	September.2021	06.09.2021		

Amin Al-Habashneh
RA Manager

Atlas Medical

Declaration Ref No: DC21-0193

8.00.18.0.0500	RPR Carbon Antigen Kit,500 Tests	General-IVD	32450
8.00.18.0.1000	RPR Carbon Antigen Kit, 1000 Tests	General-IVD	32450
8.00.18.4.0500	RPR Carbon Antigen Kit,500 Tests (3x3.4ml reagent,2x1 controls)	General-IVD	32450
8.00.18.5.0500	RPR Carbon Antigen Kit, 500 Tests, (3x3.4ml reagent,2x1 controls)	General-IVD	32450
8.00.18.8.0500	RPR Carbon Antigen 500 Test (10ml reagent) without Control's.	General-IVD	32450
8.00.18.9.0050	RPR Carbon Antigen Kit, (5x10ml Reagent,2x2ml Control) , white glass Slide, Stirring Stick.	General-IVD	32450
8.33.04.0.0001	RPR Positive control	General-IVD	32450
8.33.04.1.0001	RPR Positive control ,Bulk	General-IVD	32450
8.33.04.0.0100	RPR Positive control(100ml/vial)	General-IVD	32450
8.33.04.0.0500	RPR Positive control(500ml/bottle)	General-IVD	32450
8.33.08.0.0001	RPR Negative control	General-IVD	32450

Is produced under Atlas quality system (ISO13485: 2016) supported by GMED certificate:

Certificate N^{0}.: 36655 rev 1

Expiry Date: October 8 th.2023

and complies with the essential requirements of

In Vitro Diagnostic Medical Devices Directive 98/79/EC Annex I

And

EN ISO 18113-1, -2 :2011, EN ISO 15223:2016

EN ISO 14971:2019, EN ISO 23640 :2015 , ISO 2859 :2017,

EN 13612:2002, EN 13641:2002 , EN 13975:2003, ISO 13485:2016

And

Intended for In-Vitro Professional use only.

This Declaration includes the batches produced beyond this day according to the product Lot Log.

Manufacturer
Atlas Medical GmbH
Ludwig-Erhard-Ring 3
15827 Blankenefelde-Mahlow Germany.

Atlas Medical
Quality Diagnostic Products

Atlas Medical CE 0459

Blood Grouping Reagents: Anti-A Monoclonal Reagent, Anti-B Monoclonal Reagent, Anti-AB Monoclonal Reagent, Anti-D IgG/IgM blend Reagent, & Their variants SLIDE AND TUBE TESTS

IVD **For *In-Vitro* and professional use only**

Store at 2- 8°C

INTENDED USE

The blood grouping reagents are used to detect the presence or absence of A, B or Rhesus Antigens on the surface of human red blood cells based on hemaglutination using slide or tube test techniques in whole blood samples or anticoagulant blood samples collected in EDTA , citrate or heparin tubes.

INTRODUCTION & PRINCIPLES

Blood grouping reagents are prepared from In-Vitro culture supernatants of hybridized immunoglobulin-secreting mouse cell lines. The reagents are diluted with phosphate buffer containing sodium chloride, EDTA and bovine albumin to give reagents that are optimized for use in tube and slide procedures. **Anti-A monoclonal reagent is colored with acid blue (patent blue) dye, Anti-B monoclonal reagent is colored with acid yellow (tartrazine) dye, and Anti-AB monoclonal reagent is not colored.** The test procedure is based on hemaglutination principle, where red cells possessing the antigen agglutinate in the presence of the corresponding antibody indicating that the result is positive. The test is considered negative when no agglutination appears.

Anti-D IgG/IgM blend reagent is prepared from carefully blended human monoclonal IgM and IgG. Anti-D IgG/IgM blend reagent is suitable for slide and tube test procedures. The reagent will directly agglutinate Rh D positive cells, including majority of variants (but not D^{VI}) and a high proportion of weak D (Du) phenotypes. The reagent will agglutinate category D^{VI} and low grade weak D (D^{u}) phenotypes by the indirect anti-globulin techniques.

Anti-D IgG/IgM blend reagent is diluted with a sodium chloride solution, sodium phosphate solution and bovine albumin (sodium caprylate free). Anti-D IgG/IgM blend reagent is not colored. The procedure is based on hemaglutination principle, where red cells' possessing the antigen agglutinates in the presence of the corresponding antibody in the reagent indicating that the result is positive. The test is considered negative when no agglutination appears.

MATERIALS

MATERIALS PROVIDED

Blood Grouping Reagents:

- Anti-A monoclonal reagent (10 ml/vial), Clone: (9113D10).
- Anti-B monoclonal reagent (10 ml/vial), Clone: (9621A8).
- Anti-AB monoclonal reagent (10ml/vial), Clone: (152D12+9113D10).
- Anti-D IgG/IgM Blend reagent (10 ml/vial), Clone: (P3X61 + P3X21223B10 + P3X290 + P3X35).

MATERIALS NEEDED BUT NOT PROVIDED

- Plastic test tube or glass.
- Isotonic saline solution (% 0.9) NaCl).
- Applicator sticks.
- Centrifuge (100-1200 (g) for tube test).
- Timer.
- Incubator
- Anti-Human Globulin Reagent (can be ordered from Atlas Medical).
- White or transparent glass slide.

PRECAUTIONS

- The reagents are intended for in vitro diagnostic use only.
- The test is for well trained professional healthy user not for lay user.
- These reagents are derived from animal and human sources, thus, appropriate care must be taken in the use and disposal of these reagents, as there are no known test methods that can guarantee absence of infectious agents.
- Do not use reagents if it is turbid or contain particles as this may indicate reagent deterioration or contamination.
- Protective clothing should be worn when handling the reagents.
- **The reagents contain (0.1-0.2%) Sodium Azide and 0.02% sodium arseniate which is toxic and can be absorbed through the skin. When drained, the drains should be thoroughly flushed with water.**
- The reagents should be used as supplied and in accordance to the procedure mentioned below. Don't use beyond expiration date.
- Avoid cross contamination of reagents or specimens.
- Visible signs of microbial growth in any reagent may indicate degradation and the use of such reagent should be discontinued.
- Don't use these reagents if the label is not available or damaged.
- Do not use dark glass slide.
- Don't use the kit if damaged or the glass vials are broken or leaking and discard the contents immediately.
- Test materials and samples should be discarded properly in a biohazard container.
- Wash hands and the test table top with water and soap once the testing is done.
- Heamolysed blood sample should not be used for testing.
- The test should be performed at room temperature in a well let area with very good visibility.
- Failure to follow the procedure in this package insert may give false results or safety hazard.
- Close the vial tightly after each test.
- The reagent is considered toxic, so don't drink or eat beside it.
- If spillage of reagent occurs clean with disinfectant (disinfectant used could be irritable so handle with care).

STORAGE CONDITIONS

- The reagents should be stored refrigerated between 2 - 8°C.
- Never Freeze or expose to elevated temperature.
- The reagent is stable until the expiry date stated on the product label. Do not use the reagents past the expiry date.

REAGENT PREPRATION

- The reagents are intended for use as supplied, no prior preparation or dilution of the reagent is required.
- All reagents should be brought to room temperature before use.

SPECIMEN COLLECTION AND PREPARATION

- Blood collected with or without anticoagulant (EDTA, Heparin or Citrate) can be used for Antigen typing.

Note: Blood collected without anticoagulant should be tested immediately.

- The specimens should be tested as soon as possible after collection. If testing is delayed, the specimens should be stored at 2- 8 ºC, Sample must be retained to room temperature prior to analysis. (Testing should be carried out within five days of collections).
- Insure that there is no sign of hemolysis.
- At the time of the test, centrifuge the blood sample at 1200 RCF for 3 minutes.
- Blood collection is to be done with great care.

PROCEDURES

A. DIRECT TUBE METHOD AT ROOM TEMPERATURE

1. Prepare a 5% suspension of red blood cells in isotonic solution.
2. Using the vial dropper, transfer a drop (40±10µl) of each reagent into a separate and appropriately marked tube.
3. Add 50 µl of red blood cell suspension prepared in step 1.
4. Shake to homogenize the mixture, then centrifuge at 500g for **1 minute.**
5. Gently shake the tube in such a way to detach the cell pellet and macroscopically observe for any possible agglutination.
6. Read the reaction immediately.
7. For Anti-D tube, if the reaction is weak or negative, shake the tubes and incubate at 37°C for **15 minutes.**
8. Wash the red blood cells twice with isotonic saline solution (NaCl 0.9%) and discard the last washing liquid.
9. Add one drop (50µl) of the AHG reagent into the tube. Mix and centrifuge at 120g for **1 minute.**
10. Gently shake the tube in such a way to detach the cell pellet and macroscopically observe for any possible agglutination.
11. Read the reaction immediately.

B. ANTIGLOBULIN INDIRECT METHOD for ANTI-D

1. After immediately centrifuging and reading as above, if the reaction is weak or negative, shake the tubes and incubate at 37°C for 15 minutes.
2. Wash the red blood cells twice with isotonic saline solution (NaCl 0.9%) and discard the last washing liquid.
3. Add one drop (40 µl ± 10 µl) of ANTI-HUMAN GLOBULIN to the tube. Mix and centrifuge at 120 (g) for **1 minute**.
4. Gently shake the tube in such a way to detach the cell pellet and macroscopically observe for any possible agglutination.
5. Read the reaction immediately.

C. DIRECT SLIDE METHOD AT ROOM TEMPERATURE

1. Bring reagents and samples to room temperature (18-25°C).
2. Using the wax pen divide the slide into appropriate numbers of divisions.
3. Using the provided dropper, place one drop (40 µl ± 10 µl) of each reagent onto its correspondent division on the slide.
4. Add 25µl of the precipitated cells next to each drop of reagents.
5. Mix the reagent and the cells using a clean stirring stick over an area with a diameter of approximately 20-40mm.
6. Incubate the slide at room temperature (18-25°C) without stirring for **30 seconds**.
7. Hold the slide and gently rock the slide for **3 minutes** and observe macroscopically for any agglutination.
8. Read the reaction immediately.

READING THE RESULT

POSITIVE: If Agglutination appears.

NEGATIVE: If no agglutination is observed.

Use the below table to determine the blood group:

Result of each reaction				ABO Group
Anti-A monoclonal reagent	Anti-B monoclonal reagent	Anti-AB monoclonal reagent	Anti-D IgG/IgM blend reagent	
+	-	+	+	**A+**
+	-	+	-	**A-**
-	+	+	+	**B+**
-	+	+	-	**B-**
+	+	+	+	**AB+**
+	+	+	-	**AB-**
-	-	-	+	**O+**
-	-	-	-	**O-**

STABILITY OF THE REACTIONS

- ABO Blood Grouping Tube tests should be read immediately following centrifugation.
- Slide tests should be interpreted within three minutes to avoid the possibility that a negative result may be incorrectly interpreted as positive due to drying of reagents.
- Delay in reading and interpreting results may result in weekly positive or falsely negative reactions. Slide tests should be interpreted at the end of the three minutes.

PROCEDURE LIMITATION

1. False positive/ negative results may occur due to:
   - Contamination from test materials.
   - Improper storage, cells concentration, incubation time or temperature.
   - Improper or excessive centrifugation.
   - Deviation from the recommended technique.
   - Blood samples of weak A or B subgroups may give rise to false negative results or weak reactions when tested using slide test method. It is advisable to re-test weak subgroups using tube test method.
2. Weaker reactions may be observed with stored blood than with fresh blood.
3. ABO antigens are not fully developed at birth, weaker reactions may therefore occur with cord or neonatal red cells.
4. ABO blood grouping interpretation on individuals greater than 6 months old should be confirmed by testing serum or plasma of the individual against group A and group B red cells (reverse grouping). If the results obtained with the serum do not correlate with the red cell test, further investigation is required.
5. Return the kit to the agent if it does not function properly.
6. Anti-D IgG/IgM blend Reagent tests conducted on particular weak-D phenotypes, while satisfactory, cannot ensure recognition of all weak variants, due to the variability of antigen patterns.

DIAGNOSTIC PERFORMANCE CHARACTERISTICS

The following tables compare the results in slide and tube techniques of 3 lots of Atlas Medical reagents and the results of a CE marked device.

Slide Technique				
Group A				
Positive with anti-A monoclonal reagent and anti-AB monoclonal reagent Negative with anti-B and Negative control				
CE marked device	Lot A	Lot B	Lot C	Compliance
232	232	232	232	100%
Tube Technique				
Group A				
Positive with anti-A monoclonal reagent and anti-AB monoclonal reagent Negative with anti-B and Negative control				
CE marked device	Lot A	Lot B	Lot C	Compliance
212	212	212	212	100%

Slide Technique				
Group B				
Positive with anti-B monoclonal reagent and anti-AB monoclonal reagent Negative with anti-A and Negative control				
CE marked device	Lot A	Lot B	Lot C	Compliance
61	61	61	61	100%
Tube Technique				
Group B				
Positive with anti-B monoclonal reagent and anti-AB monoclonal reagent Negative with anti-A and Negative control				
CE marked device	Lot A	Lot B	Lot C	Compliance
61	61	61	61	100%

Slide Technique				
Group O				
Negative with anti-A monoclonal reagent, Anti-B monoclonal reagent and anti-AB monoclonal reagent Negative with Negative control				
CE marked device	Lot A	Lot B	Lot C	Compliance
241	241	241	241	100%
Tube Technique				
Group O				
Negative with anti-A monoclonal reagent, Anti-B monoclonal reagent and anti-AB monoclonal reagent Negative with Negative control				
CE marked device	Lot A	Lot B	Lot C	Compliance
243	243	243	243	100%

Slide Technique				
Group AB				
Positive with anti-A monoclonal reagent, Anti-B monoclonal reagent and anti-AB monoclonal reagent Negative with Negative control				
CE marked device	Lot A	Lot B	Lot C	Compliance
33	33	33	33	100%
Tube Technique				
Group AB				
Positive with anti-A monoclonal reagent, Anti-B monoclonal reagent and anti-AB monoclonal reagent Negative with Negative control				
CE marked device	Lot A	Lot B	Lot C	Compliance
24	24	24	24	100%

No inversion in diagnosis has been shown: from a qualitative point of view we have observed 100% compliance in direct group testing in slide and tube techniques for determination of A, B, AB and O groups for the three lots of Atlas Medical.

QUALITY CONTROL

The reactivity of all blood grouping reagents should be confirmed by testing known positive and negative red blood cells on each day of use.

To confirm the specificity and sensitivity, Blood grouping reagents should be tested with antigen-positive and antigen-negative red blood cells.

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1. BCSH Blood Transfusion Task Force. Guidlines for microplate techniques in liquid-phase blood grouping and antibody screening. Clin. Lab. Haem 1990: 12, 437-460.
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PPI861A01
Rev.L (19.02.2022)

CE 0459

LIST OF VARIENTS:

Product Code	Product Name
8.02.00.0.0010	Anti-A Monoclonal Reagent (Titer: 1 /512), 10ml/vial, 1 vial/Carton Box
8.02.00.1.0100	Anti-A Monoclonal Reagent (Titer: 1 /512), 10ml/vial. 10 vials / Plastic Pack
8.02.00.1.0180	Anti-A Monoclonal Reagent (Titer: 1 /512), 10ml/vial. 18 vials / Carton Box
8.02.01.0.0010	Anti-B Monoclonal Reagent (Titer: 1 /512), 10ml/vial, / Carton Box
8.02.01.1.0100	Anti-B Monoclonal Reagent (Titer: 1 /512), 10ml/vial, 10 vials / Plastic Pack
8.02.01.1.0180	Anti-B Monoclonal Reagent (Titer: 1 /512), 10ml/vial, 18 vials / Carton Box
8.02.02.0.0010	Anti-AB Monoclonal Reagent (Titer: 1 /512), 10ml/vial, 1 vial/ Carton Box
8.02.02.1.0100	Anti-AB Monoclonal Reagent (Titer: 1 /512), 10ml/vial, 10 vials/Plastic Pack
8.02.02.1.0180	Anti-AB Monoclonal Reagent (Titer: 1 /512), 10ml/vial, 18 vials/Carton Box
8.02.03.0.0010	Anti-D IgG/IgM Blend Reagent (Titer: 1 /128), 10ml/vial, 1 vial/ Carton Box
8.02.03.1.0100	Anti-D IgG/IgM Blend Reagent (Titer: 1 /128), 10ml/vial, 10 vials / Plastic Pack
8.02.03.1.0180	Anti-D IgG/IgM Blend Reagent (Titer: 1 /128), 10ml/vial, 18 vials / Carton Box
8.02.04.0.0010	Anti-A Monoclonal Reagent (Titer: 1 /256), 10ml/vial, 1 Vial/Carton Box
8.02.04.0.0100	Anti-A Monoclonal Reagent (Titer: 1 /256), 10ml/vial, 10 vials / Plastic Pack
8.02.05.0.0010	Anti-B Monoclonal Reagent (Titer: 1 /256), 10ml/vial, 1vial/Carton Box
8.02.05.0.0100	Anti-B Monoclonal Reagent (Titer: 1 /256), 10ml/vial, 10 vials /Plastic Pack
8.02.05.6.0030	ABO Set (Anti-A (1/256), Anti-B (1 /256), Anti-D (1/64)),3x10ml / plastic Pack
8.02.05.7.0020	ABO Set: Anti-A (1/256), Anti-B (1 /256), 2x10ml /Plastic Pack
8.02.06.0.0010	Anti-AB Monoclonal Reagent (Titer: 1 /256), 10ml/vial, 1vial/Carton Box
8.02.06.1.0100	Anti-AB Monoclonal Reagent (Titer: 1 /256), 10ml/vial,10 vials /Plastic Pack
8.02.06.1.0180	Anti-AB Monoclonal Reagent (Titer: 1 /256), 10ml/vial,18 vials / Carton Box
8.02.07.0.0010	Anti-D IgG/IgM Blend Reagent (Titer: 1 /64), 10ml/vial, 1Vial/ Carton Box
8.02.07.1.0100	Anti-D IgG/IgM Blend Reagent (Titer: 1 /64), 10ml/vial, 10 vials / Plastic Pack
8.02.47.0.0030	ABO Set (Anti-A (1 /512), Anti-B (1 /512), Anti-D (1 /128)),3x10ml/Plastic Pack
8.02.47.1.0030	ABO Set (Anti-A (1 /256), Anti-B (1 /256), Anti-D (1 /64)), 3x10ml /Carton Box.
8.02.47.3.0030	ABO Set (Anti-A (1 /256), Anti-B (1 /256), Anti-D (1 /64)), 3x10ml /Plastic Pack
8.02.47.5.0030	ABO Set (Anti-A (1 /256), Anti-B (1 /256), Anti-D (1 /128)), 3x10ml/Plastic Pack
8.02.49.0.0040	ABO Set (Anti-A (1 /256), Anti-B (1 /256), Anti-AB (1 /256), Anti-D (1 /64)), 4x10ml/Carton Box
8.02.49.2.0040	ABO Set (Anti-A (1 /256), Anti-B (1 /256), Anti-AB (1 /256), Anti-D (1 /128)), 4 x 10ml, 4 vials/Plastic Pack
8.02.53.0.0040	ABO Set (Anti-A (1 /512), Anti-B (1 /512), Anti-AB (1 /512) Anti-D (1 /128)), 4x10ml/Plastic Pack
8.02.53.1.0040	ABO Set (Anti-A (1 /512), Anti-B (1 /512), Anti-AB (1 /512) Anti-D (1 /128)), 4x10ml, 4vials/Plastic Pack
8.02.70.0.0010	Anti-A monoclonal reagent , Titer (1/1024), 10 ml/vial, 1Vial/ Carton Box
8.02.71.0.0010	Anti-B Monoclonal reagent (Titer: 1 /1024) , 10 ml/vial ,1Vial/ Carton Box
8.02.72.0.0010	Anti-AB Monoclonal reagent (Titer: 1 /1024) , 10 ml/vial , 1Vial/ Carton Box
8.02.85.0.0010	Anti-D IgG/IgM Blend reagent (Titer 1 /256), 10ml/vial, 1Vial/ Carton Box

REF	Catalogue Number		Temperature limit
IVD	*In Vitro* diagnostic medical device		Caution
	Contains sufficient for <n> tests and Relative size		Consult instructions for use (IFU)
LOT	Batch code		Manufacturer
	Fragile, handle with care		Use-by date
	Manufacturer fax number		Do not use if package is damaged
	Manufacturer telephone number		Date of Manufacture
	Keep away from sunlight		Keep dry

Atlas Medical CE

RPR SYPHILIS CARD TEST

IVD ***For In-Vitro diagnostic and professional use only***

2°C 8°C Store at 2 to 8 °C

INTRODUCTION

Syphilis is a disease caused by infection with the spirochete Treponema pallidum. The infection is systemic and the disease is characterized by periods of latency. These features, together with the fact that T pallidum cannot be isolated in culture, mean that serologic techniques play a major role in the diagnosis and follow-up of treatment for syphilis.

Syphilis is categorized by an early primary infection in which patients may have non-specific symptoms, and potentially, genital lesions. Patients tested by serology during the primary phase may be negative for antibodies, especially if testing is performed during the first 1 to 2 weeks after symptom onset. As the disease progresses into the secondary phase, antibodies to T pallidum reach peak titers, and may persist indefinitely regardless of the disease state or prior therapy. Therefore, detection of antibodies to nontreponemal antigens, such as cardiolipin (a lipoidal antigen released by host cells damaged by T pallidum) may help to differentiate between active and past syphilis infection. Nontreponemal antibodies are detected by the rapid plasma reagin (RPR) assay, which is typically positive during current infection and negative following treatment or during late/latent forms of syphilis.

PRINCIPLE

RPR utilises carbon particles coated with cardiolipin antigen to detect reagin antibodies present in serum or plasma of syphilitic persons.

Specimens that contain reagin cause aggregation of the carbon particles which appear as dark clumps against a white background. The aggregation can be read macroscopically. Non-reactive samples typically appear as a smooth non-aggregated pattern which may form buttons in the centre of the test area.

MATERIALS

MATERIALS PROVIDED

- **RPR carbon antigen reagent**:Contains less than 0.1% sodium azide.
- **Positive Control** : Contains less than 0.1% sodium azide.
- **Negative control**: Contains less than 0.1% sodium azide
- **RPR test cards (Optional).**
- **Plastic sticks.**
- **Package insert**.

NOTE: This package insert is also used for individually packed reagent.

MATERIALS NEEDED BUT NOT PROVIDED

- Rotator (100rpm).
- Timer.
- Pipettes.

SAMPLES

Fresh serum or plasma. The samples with presence of fibrin should be centrifuged before testing. Do not use highly hemolized or lipemic samples.

PRECAUTIONS

- For professional in vitro diagnostic use only. Do not use after expiration date.
- Do not eat, drink or smoke in the area where the specimens or kits are handled.
- Always use a fresh pipette tip for every test.
- Handle all negative and positive in the manner as patient specimens .
- Wear protective clothing such as laboratory coats, disposable gloves and eye protection when specimens are assayed.
- The used test should be discarded according to local regulations.
- Components of different human origin have been tested and found to be negative for the presence of antibodies anti- HIV 1+2 and anti-HCV, as well as for HBsAg. However, the controls should be handled cautiously as potentially infectious.

STORAGE AND STABILITY

All components of the kit are stable until the expiration date on the label when stored tightly closed at 2-8°C.

PROCEDURES

QUALITATIVE PROCEDURE

- **Mix well the RPR reagent before use.**

1. Bring the reagents and samples to room temperature.
2. Dispense **50 µL of each sample** into a separate circle on the card. Use a separate tip for each sample.
3. Dispense **1 drop of each of positive and negative controls** into two additional circles.
4. Gently shake the dispensing vial and slightly press to remove air bubbles from the needle and the drop obtained is correct.
5. Dispense **1 drop (17.5 µl) of RPR antigen** to each circle next to the sample to be tested.
6. Place the card on a mechanical rotator and rotate at 100 r.p.m. for 8 minutes.
7. Observe macroscopically for agglutination within a minute after removing the card from the rotator.

SEMI-QUANTITATIVE PROCEDURE

- **Mix well the RPR reagent before use**.

1. Make doubling dilutions from Undiluted to 1:16 normal saline.
2. Place 50 µl of each dilution in to a separate circle on the test card.
3. Spread each dilution evenly over the test circle.
4. Continue as from Qualitative procedure .
   The titer of the sample is expressed as the final dilution which shows aggregation of the carbon particles.

PERFORMANCE CHARACTERISTICS

1. **Sensitivity:** 100%.
2. **Specificity**: 100%.

INTERPRETATION OF TEST RESULTS

1. **Strong Reactive:** Large clumps of carbon particles with a clear background.

2. **Reactive:** Large clumps of carbon particles somewhat more disperse than Strong Reactive pattern.

3. **Weak Reactive:** Small clumps of carbon particles with light grey background.

4. **Trace Reactive:** Slight clumping of carbon particles typically seen as a button of aggregates in the centre of the test circle or dispersed around the edge of the test circle.

5. **Non-Reactive:** Typically a smooth grey pattern or a button of non-aggregated carbon particles in the centre of the test circle.

REFERENCES

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PPI2074A01
Rev B (15.03.2021)

REF	Catalogue Number		Temperature limit
IVD	*In Vitro* diagnostic medical device		Caution
Σ	Contains sufficient for <n> tests and Relative size		Consult instructions for use (IFU)
LOT	Batch code		Manufacturer
	Fragile, handle with care		Use-by date
	Manufacturer fax number		Do not use if package is damaged
	Manufacturer telephone number		Date of Manufacture
	Keep away from sunlight		Keep dry

Atlas Medical

CE

TPHA TEST KIT

For the detection of antibodies to T.pallidum in human Serum using micro haemagglutination.

IVD *For In-Vitro diagnostic and professional use only*

Store at 2° to 8° C

INTENDED USE

TPHA test kit is designed for the detection of antibodies to *Treponema pallidum* (IgG and IgM antibodies) in human serum or plasma based on the principle of passive haemagglutination.

INTRODUCTION

Syphilis is a venereal disease caused by the spirochaete micro-organism *Treponema pallidum*. As this organism cannot be cultured on artificial media the diagnosis of syphilis depends on the correlation of clinical data with the specific antibody demonstrated by serological tests. Serological screening tests for syphilis using cardiolipin and lecithin as antigens are simple to perform but biological false positive (BFP) reactions occur frequently because the tests use non-treponemal antigens.

The TPI and FTA-ABS tests utilize pathogenic *Treponema pallidum* as the antigen but these tests present some difficulties for routine serodiagnosis. The TPI test requires living pathogenic *T.Pallidum* and the FTA-ABS test requires a flourescence microscope. Both tests require a high level of expertise.

TPHA test kit has been shown to be a convenient and specific test for the diagnosis of treponemal infection, having specificity similar to that of the TPI test and sensitivity comparable to that of the FTA-ABS test. It requires minimum laboratory equipment and is very simple to perform.

TPHA reagents are used to detect human serum antibody to *T.pallidum* by means of an indirect haemagglutination (IHA) method. Preserved avian erythrocytes are coated with antigenic components of pathogenic *T.pallidum* (Nichol's strain). These Test Cells agglutinate in the presence of specific antibodies to *T.pallidum,* and show characteristic patterns in microtitration plates.

Any non-specific reactions occurring are detected using the Control Cells, which are avian erythrocytes not coated with *T.pallidum* antigens. Non-specific reactions may also be absorbed out using these Control Cells.

Antibodies to non-pathogenic treponemes are absorbed by an extract of Reiter's treponemes, included in the cell suspension. Test results are obtained in 45-60 minutes and the cell agglutination patterns are both easily read and long lasting.

The test sample is diluted in absorbing diluent to remove possible cross-reacting heterophile antibody and to remove, block, or absorb potentially cross-reacting. Nonpathogenic treponemal antibodies.

MATERIALS

MATERIALS PROVIDED

- Test cells; preserved avian erythrocytes sensitised with T.pallidum antigen.
- Control cells; preserved avian erythrocyte.
- Diluent.
- Positive control serum; (prediluted 1:20), Use neat. This will give an equivalent titer of 1/640:/2560 in the quantitative test.
- Negative control serum; (prediluted 1:20), Use neat.
- Package Insert.

MATERIALS NEEDED BUT NOT PROVIDED

- Accurate pipettes for delivering 10:25:75 and 190 microlitres.
- U-Well microtitration plates.

PRECAUTIONS

The reagents and controls contain 0.1% sodium azide as a preservative. Avoid ingestion and contact with skin or mucus membrane. Normal laboratory precautions should be maintained while handling test reagents.

REAGENTS HANDELING

- All the reagents must be allowed to reach room temperature before use.
- Do not freeze any of the reagents.
- Do not use heamolysed, contaminated or lipaemic serum or plasma for testing as this will adversely affect the results.

REAGENTS STORAGE

- The kit should be stored at 2-8º C in an upright position at all times.
- Under these conditions, kit performance characteristics will be maintained for at least 15 or 18 months from date of manufacture. See expiry date on kit label.
- Reagents should be discarded if they become contaminated or do not demonstrate correct activity with the controls.
- The reagents in each kit have been standardized to produce the proper reaction and reagents should not be interchanged with those from other batches.

SAMPLE PREPARATION

- The test is designed for use with serum only.
- Plasma samples should not be used.
- The samples should be free from haemolysis and contamination.
- Serum samples may be stored at 2-8° C if a preservative is added prior to storage.
- For long term storage sera should be stored at -20° C Strictly avoid contaminating any of the reagents or serum dilutions with saliva. This will cause confusing patterns similar to positive results with specimens which should be negative.

PROCEDURES

QUALITATIVE METHOD

Each sample requires 3 wells of a microtitration plate.

1. Add 190µl of diluent to Well 1.
2. Add 10µlserum to Well 1. (Sample dilution 1:20).
3. Using a micropipette, mix contents of Well 1 and transfer 25µl to Wells 2 & 3.
4. Ensure that the Test and Control Cells are thoroughly resuspended. Add 75µlof control cells to Well 2. Add 75µl of Test Cells to Well 3.
5. Tap the plate gently to mix the contents thoroughly.
6. Incubate 45-60 minutes at room temperature.
7. Caution! Keep the plate away from heat, direct sunlight and any source of vibration.
8. Read results. Results are stable for 24hrs if the plate is covered and the above precautions are observed.

NOTE

Kit controls can be run in parallel and are diluted and ready for use.

QUANTITATIVE TEST

Each sample requires 8 Wells of a microtitration plate, Labeled A through to H.

1. Add 25µl of diluent to Wells B to H inclusive.
2. Transfer 25µlof 1:20 serum dilution from screening test to Wells A and B.
3. Take 25µl of diluted serum from Well B and serially dilute from Wells B to H inclusive in 25µl aliquots, discarding 25µl of diluted serum from Well H.
4. Ensure that the Test Cells are thoroughly resuspended. Add 75µl of Test cells to wells A to H inclusive. This will give a dilution of serum of 1/ 80 in well A through 1/ 10240 Well H.
5. Shake the plate gently to mix the contents thoroughly.
6. Incubatefor45-60 minutes at room temperature.
7. Caution! Keep the plate away from heat, direct sunlight and any source of vibration.
8. Read results. Results are stable for 24hrs. if the plate is covered and the above precautions are observed.

RESULTS

RESULTS	TEST CELLS	CONTROL CELLS
Strong Positive	Full cell pattern covering the bottom of the well.	No agglutination tight button
Weak Positive	Cell pattern covers approx. 1/3 of well bottom	No agglutination tight button
Indeterminate	Cell pattern shows a distinctly open center	No agglutination tight button
Negative	Cells settled to a compact bottom, typically with a small clear center.	No agglutination tight button
Non-specific *	Positive reaction	Positive reaction

Non-specific absorption *

1. Add 10µl to a small tube then add 190µl of Control Cells. Mix well and stand for 30 minutes.
2. Centrifuge for 15 minutes at 1000 rpm and test the supernatant by the qualitative method.

Note:

If the result is repeatedly non-specific the sample should be tested by another method eg. Reagin or FTA-ABS.

Although TPHA test is highly specific, **false positive results** have been known to occur in patients suffering from leprosy, infectious mononucleosis and connective tissue disorders. For confirmation FTA-ABS test should be used.

INTERPRETATION OF RESULTS.

Strong positive reactions may show some folding at the edge of the cell mat.

When the Test well is positive, the Control well should be observed.

The Control cells should settle to a compact button. They should not be used as a comparison for Non-Reactive serum patterns since the Control Cells will give a more compact pattern than the Test Cells.

Weak positive may show partially not full cell pattern cover the well bottom

INVALID may show Agglutination in the Control well indicates the presence of non-specific agglutinins in the sample. A serum that gives this result may be absorbed using the Control Cells as detailed under Non-specific absorption.

INDETERMINATEA may show a doubtful reaction with Test Cells This result may indicate a low level of antibody in early primary syphilis or yaws. This sample should be first retested in the qualitative test then a further sample should be tested at a later date to determine whether or not there is a rising titer. It is also advisable to perform a regain test and/or another confirmation test (FTA-ABS) to complete the profile of the test serum.

Negative may show cells settled as a dot at the bottom of the well

PERFORMANCE

SENSITIVITY

With clinical samples when compared to FTA-ABS and/or clinical diagnosis was 99.7% (298/299)

SPECIFICITY

With clinical samples was 99.3% (301/303).

CROSS REACTIVITY

Reactive results may indicate an active or successfully treated infection. The following have all been shown not to interfere with the test results (10 clinical samples of each)

- Rheumatoid Factor.
- Post Hepatitis B vaccination.
- Genital Herpes.
- Leptospirosis.
- EBV Infection.
- SLE.
- Lyme's Disease.

REFRENCES:

1. Rathlev T. - Haemagglutination tests utilizing antigens from pathogenic and apathogenic Treponema pallidum WHO/VDT/RES 1965 ; 77 : 65.
2. Tomizawa T, Kasamatsu S. - Haemagglutination tests for diagnosis of syphilis. A preliminary report. Japan. J. Med. Sci. Biol. 19, 305-308, 1966.
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4. Tomizawa T. Kasamatsu S. Yamaya S. - Usefulness of the haemagglutination test using Treponema pallidum antigen (TPHA) for the serodiagnosis of syphilis. Jap J Med Sci Biol 1969; 22: 341-50.
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ATLAS MEDICAL

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PPI080A01

Rev F (09.06.2016)

REF	Catalogue Number		Store at
IVD	For In-Vitro Diagnostic use		Caution
Σ	Number of tests in the pack		Read product insert before use
LOT	Lot (batch) number		Manufacturer
	Fragile, handle with care		Expiry date
	Manufacturer fax number		Do not use if package is **damaged**
	Manufacturer telephone number		

www.dialab.at

STATEMENT

We, D**IALAB Produktion und Vertrieb von chemisch-technischen Produkten und Laborinstrumenten Gesellschaft m.b.H.**, having a registered office at **IZ-NOE Sued Hondastrasse, Objekt M55, A-2351 Wr. Neudorf, AUSTRIA** assign SRL SANMEDICO having a registered office at A. Corobceanu street 7A, apt. 9, Chişinău MD-2012, Moldova , as authorized representative in correspondence with the conditions of directive 98/79/EEC. We declare that the company mentioned above is authorized to register, notify, renew or modify the registration of medical devices on the territory of the Republic of Moldova. This declaration will stay in force for 2 years or if one of the parties is deciding to cancel it with a one-month notice.

Date :05.04.2023
Signature:

DIALAB
Produktion und Vertrieb von chemisch - technischen Produkten und Laborinstrumenten Gesellschaft m.b.H.
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Christina Ernst
Export Manager

SNAS
Reg. No. 575/P-051

Notified body 2854 | SKTC-180

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bqs.
The Trust. We Make.

EC Certificate IVDD 22 004 0137

Full Quality Assurance System

Directive 98/79/EC on In Vitro Diagnostic Medical Devices
Annex IV excluding section 4 and section 6

Certificate holder: **DIALAB Produktion und Vertrieb von chemisch - technischen Produkten und Laborinstrumenten Gesellschaft m.b.H**

IZ NOE-Sued Hondastrasse Objekt M55, A-2351 Wiener Neudorf, Austria

Related audit report: AIVDD 2022NB003 I01

Other Facility(ies): -

The certificate was issued with respect to the following scope:

HBsAg Sensitive ELISA

This certificate is effective from 24 May 2022 until 26 May 2025 and remains valid subject to execution of regular examinations and continuous compliance.
Initial version of the certificate was effective from 24 May 2022.

Certification has been authorized by

Digitally signed by Radovan Máčaj

Radovan Macaj
Head of Notified body

bqs.
Certified In Vitro diagnostic medical device

bqs issued the certificate on the basis of performed examination in accordance with Council Directive 98/79/EC, Slovak government decree No. 569/2001 Coll. of Laws and EN ISO/IEC 17065:2012. Notified Body has performed examination of quality assurance system in accordance with Annex IV excluding section 4 and section 6 of the directive and found that the quality assurance system meets the requirements laid down by Annex IV. For the placing on the market of List A devices an EC design-examination certificate according to Annex IV section 4 is required. Please see also notes overleaf if any.

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SNAS
Reg. No. 575/P-051

Notified body 2854 | SKTC-180

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Additional information on certification

Related to certificate number:

IVDD 22 004 0137

Description of product(s) within the certification scope:

HBsAg Sensitive ELISA is an enzyme-linked immunosorbent assay (ELISA)for the qualitative detection of Hepatitis B surface antigen (HBsAg) in human serum or plasma. It is intended for the screening of blood donors and for the diagnosis of patients related to infection with Hepatitis B virus.

Types/Categories/Models:	Z12360 (96 wells)
Classification:	List A
Validity conditions:	-

This certificate is effective from 24 May 2022 until 26 May 2025 and remains valid subject to execution of regular examinations and continuous compliance.
Initial version of the certificate was effective from 24 May 2022.

bqs.
Certified In Vitro diagnostic medical device

bqs issued the certificate on the basis of performed examination in accordance with Council Directive 98/79/EC, Slovak government decree No. 569/2001 Coll. of Laws and EN ISO/IEC 17065:2012. Notified Body has performed examination of quality assurance system in accordance with Annex IV excluding section 4 and section 6 of the directive and found that the quality assurance system meets the requirements laid down by Annex IV. For the placing on the market of List A devices an EC design-examination certificate according to Annex IV section 4 is required. Please see also notes overleaf if any.

bqs.
The Trust. We Make.

SNAS
Reg. No. 575/P-051

Notified body 2854 | SKTC-180

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EC Certificate IVDD 22 005 0139

Full Quality Assurance System

Directive 98/79/EC on In Vitro Diagnostic Medical Devices
Annex IV excluding section 4 and section 6

Certificate holder: **DIALAB Produktion und Vertrieb von chemisch - technischen Produkten und Laborinstrumenten Gesellschaft m.b.H**

IZ NOE-Sued Hondastrasse Objekt M55, A-2351 Wiener Neudorf, Austria

Related audit report: AIVDD 2022NB003 I01

Other Facility(ies): -

The certificate was issued with respect to the following scope:

HCV Ab Sensitive

This certificate is effective from 24 May 2022 until 26 May 2025 and remains valid subject to execution of regular examinations and continuous compliance.
Initial version of the certificate was effective from 24 May 2022.

Certification has been authorized by

Digitally signed by Radovan Máčaj

Radovan Macaj
Head of Notified body

bqs.
Certified In Vitro diagnostic medical device

bqs issued the certificate on the basis of performed examination in accordance with Council Directive 98/79/EC, Slovak government decree No. 569/2001 Coll. of Laws and EN ISO/IEC 17065:2012. Notified Body has performed examination of quality assurance system in accordance with Annex IV excluding section 4 and section 6 of the directive and found that the quality assurance system meets the requirements laid down by Annex IV. For the placing on the market of List A devices an EC design-examination certificate according to Annex IV section 4 is required. Please see also notes overleaf if any.

bqs.
The Trust. We Make.

SNAS
Reg. No. 575/P-051

Notified body 2854 | SKTC-180

bqs. s.r.o.
Studentska 12, 911 01
Trencin | Slovakia
www.bqsgroup.eu

Additional information on certification

Related to certificate number:

IVDD 22 005 0139

Description of product(s) within the certification scope:

HCV Ab Sensitive is an enzyme-linked immunosorbent assay (ELISA) for the qualitative detection of antibodies against Hepatitis C Virus (HCV) in human serum or plasma. It is intended for the screening of blood donors and for diagnosing of patients related to infection with Hepatitis C virus.

Types/Categories/Models:	Z13370 (96 wells) Z13500 (480 wells)
Classification:	List A
Validity conditions:	-

This certificate is effective from 24 May 2022 until 26 May 2025 and remains valid subject to execution of regular examinations and continuous compliance.
Initial version of the certificate was effective from 24 May 2022.

bqs.
Certified In Vitro diagnostic medical device

bqs issued the certificate on the basis of performed examination in accordance with Council Directive 98/79/EC, Slovak government decree No. 569/2001 Coll. of Laws and EN ISO/IEC 17065:2012. Notified Body has performed examination of quality assurance system in accordance with Annex IV excluding section 4 and section 6 of the directive and found that the quality assurance system meets the requirements laid down by Annex IV. For the placing on the market of List A devices an EC design-examination certificate according to Annex IV section 4 is required. Please see also notes overleaf if any.

ZERTIFIKAT ◆ CERTIFICATE ◆ 認證證書 ◆ СЕРТИФИКАТ ◆ CERTIFICADO ◆ CERTIFICAT

DAkkS Deutsche Akkreditierungsstelle D-ZM-11321-01-00

TÜV SÜD Product Service

Certificate

No. Q5 026709 0009 Rev. 01

Holder of Certificate:

DIALAB Produktion und Vertrieb von chemisch-technischen Produkten und Laborinstrumenten Gesellschaft m.b.H.
IZ-NOE Sued
Hondastrasse, Objekt M55
2351 Wr. Neudorf
AUSTRIA

Certification Mark:

TÜV SÜD EN ISO 13485 tuvsud.com/ps-cert

Scope of Certificate:

Design, development, production and distribution of in-vitro diagnostic reagents and testkits in the areas of immunological detection of infectious diseases, immunochemistry/immunology/clinical chemistry biomarkers (analytes: enzymes, substrates, electrolytes reagents; controls/standards/calibrators), urinalysis, haematology, haemostasis and immunohaematology (blood grouping). Distribution of in-vitro diagnostic instruments including accessories for immunology, clinical chemistry, haematology, haemostasis and urinalysis.

The Certification Body of TÜV SÜD Product Service GmbH certifies that the company mentioned above has established and is maintaining a quality management system, which meets the requirements of the listed standard(s). All applicable requirements of the testing and certification regulation of TÜV SÜD Group have to be complied with. For details and certificate validity see: www.tuvsud.com/ps-cert?q=cert:Q5 026709 0009 Rev. 01

Report No.: 713237224

Valid from: 2022-03-29
Valid until: 2025-03-28

Date, 2022-03-17

Christoph Dicks
Head of Certification/Notified Body

TÜV SÜD Product Service GmbH • Certification Body • Ridlerstraße 65 • 80339 Munich • Germany

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DAkkS Deutsche Akkreditierungsstelle D-ZM-11321-01-00

TÜV SÜD Product Service

Certificate

No. Q5 026709 0009 Rev. 01

Applied Standard(s):

EN ISO 13485:2016
Medical devices - Quality management systems - Requirements for regulatory purposes
(ISO 13485:2016)
DIN EN ISO 13485:2016

Facility(ies):

DIALAB Produktion und Vertrieb von chemisch-technischen Produkten und Laborinstrumenten Gesellschaft m.b.H.
IZ-NOE Sued, Hondastrasse, Objekt M55, 2351 Wr. Neudorf, AUSTRIA

See Scope of Certificate

Parameters: ./.

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ELISA ENZYME **L**INKED **I**MMUNO**S**ORBENT **A**SSAY

Microwell Method

HBcAb

REF Z00364

For in vitro Diagnostic Use

P r o d u c t I n s e r t

Enzyme Linked Immunosorbent Assay for the **cut-off** determination of antibodies to Hepatitis B core antigen (HBcAg) in human serum or plasma.

Microwell Method - 96 wells

(12 x 8-well antigen coated strips

Individual breakaway)

INTRODUCTION

Hepatitis B core Antigen (or HBcAg) is the major component of the core particles of Hepatitis B virus (or HBV). Particles have a size of 27 nm and contain a circular double-stranded DNA molecule, a specific DNA-polymerase and HBeAg; HBcAg is composed of a single polypeptide of about 17 kD that is released upon dis-aggregation of the core particles; the antigen contains at least one immunological determinant. Upon primary infection, anti HBcAg antibodies are one of the first markers of HBV hepatitis appearing in the serum of the patient, together or slightly later than HBsAg, the viral surface antigen. Anti HBcAg antibodies are produced usually at high titers and their presence is detectable even years after infection. Isolated HBcAb, in absence of other HBV markers, have been observed in blood units, suggesting the use of this test for screening HBV, in addition of HBsAg. The determination of HBcAb has become important for the classification of the viral agent, together with the detection of the other markers of HBV infection, in sera and plasma.

PRINCIPLE OF THE ASSAY

This anti-HBc ELISA kit is based on solid phase, one step incubation competitive principle ELISA. Anti-HBc if present in the sample competes with monoclonal anti-HBc conjugated to horseradish peroxidase (HRP) for a fixed amount of purified HBcAg pre-coated in the wells. When no anti-HBc is present in the sample, the HRP labeled anti-HBc will be bound with the antigens inside the wells and any unbound HRP-Conjugate is removed during washing. Chromogen B and A solutions are added into the wells and during incubation the colorless Chromogens are hydrolyzed by the bound HRP-Conjugate to a blue colored product. The blue color turns yellow after stopping the reaction with sulfuric acid. No or low color developing suggests the presence of antibodies to HBcAg in the sample.

Assay principle scheme: Competition ELISA

Ag(p)	**+**	**Ab(s)+(Ab)ENZ**	**→**	**[Ag(p)–Ab(s)]**	**→**	**No color**	**(+)**
Ag(p	**+**	**(Ab)ENZ**	**→**	**[Ag(p) – (Ab)ENZ]**	**→ Blue →**	**Yellow Color**	**(-)**
Incubation				**Immobilized Complex**		**Coloring**	**Results**
60 min.					**15 min.**		

Ag(p)–pre-coated HBcAg;
Ab(s)– anti-HBc in sample;
(Ab)ENZ– HRP conjugated anti-HBc ;

TEST CONDITIONS AND NOTICES

1. All the reagents contained in the kit are for “in vitro” diagnostic use only.
2. Do not use the kit or reagents after the expiry date stated on labels. Do not mix reagents of different lots.
3. Procedures should be performed carefully in order to obtain reliable results and clinical interpretations.
4. Bring all the reagents to room temperature for at least 60 min, before the test is started.
5. Avoid any contamination of reagents when taking them out of vials. We recommend use of automatic pipettes and disposable tips. When dispensing reagents, do not touch the wall of microplate wells with tips, in order to avoid any cross-contamination.
6. In the washing procedure, use only the Wash Buffer provided with the kit and follow carefully the indications reported in the “WASHING INSTRUCTIONS” section of this insert.

7. Ensure that the Substrate A/B mixture does not come in contact with oxidizing agents or metallic surfaces; avoid any intense light exposure during the incubation step or the reagent preparation.
8. Samples and materials potentially infective have to be handled with care as they could transmit infection.

   All objects come in direct contact with samples and all residuals of the assay should be treated or wasted as potentially infective. Best procedures for inactivation are treatments with autoclave at 121°C for 30 min or with sodium hypochlorite at a final concentration of 2.5% for 24 hrs. This last method can be used for the treatment of the liquid waste after that it has been neutralized with NaOH.
9. Avoid any contact of liquids with skin and mucosas.
   Use always protective talk-free gloves, glasses and laboratory coats, according to the safety regulations.

CONTENT OF THE KIT

Microwell Plate	Blank microwell strips fixed on a white strip holder. The plate is sealed in aluminum pouch with desiccant. 12×8-well strips per plate. Each well contains purified HBcAg. The microwell strips can be broken to be used separately. Place unused wells in the plastic sealable storage bag together with the desiccant and return to 2-8°C.
Enzyme Conjugate	6.5 mL per vial. Horseradish peroxidase-conjugated anti-HBc. Ready to use as supplied. Once open, stable for one month at 2-8°C.
Wash Buffer	30 mL per bottle, pH 7.4, 20x PBS (containing Tween-20 as a detergent). The concentrate must be diluted 1:20 with distilled or deionized water before use. Once diluted, stable for one week at room temperature or for two weeks at 2-8°C. **DILUTE BEFORE USE!**
Substrate Solution A	7 mL per vial. Urea peroxide solution. Ready to use as supplied. Once open, stable for one month at 2-8°C.
Substrate Solution B	7 mL per vial. TMB solution- Tetramethylbenzidine dissolved in citric acid. Ready to use as supplied. Once open, stable for one month at 2-8°C.
Stop Solution	7 mL per bottle. Diluted sulfuric acid solution (0.5 M H_2SO_4). Ready to use as supplied.
Negative Control	1 mL per vial. Protein-stabilized buffer tested non-reactive for anti-HBc. Preservatives: 0.1% ProClin 300. Ready to use as supplied. Once open, stable for one month at 2-8°C.
Positive Control	1 mL per vial. Purified anti-HBc diluted in Protein stabilized buffer Preservatives: 0.1% ProClin 300. Ready to use as supplied. Once open, stable for one month at 2-8°C.
Cardboard Sealer	1 piece. To cover the plates during incubation and to prevent the well from evaporation or contamination.

STORAGE AND STABILITY

The components of the kit will remain stable through the expiration date indicated on the label and package when stored between 2-8°C, do not freeze. To assure maximum performance of this anti-HBc ELISA kit, during storage protect the reagents from contamination with microorganism or chemicals.

MATERIALS NOT PROVIDED

1. Freshly distilled or deionized water.
2. Disposable gloves and timer.
3. Appropriate waste containers for potentially contaminated materials.
4. Disposable V-shaped troughs.
5. Dispensing system and/or pipette (single or multichannel), disposable pipette tips.
6. Absorbent tissue or clean towel.
7. Dry incubator or water bath, 37±0.5°C.
8. Microshaker for dissolving and mixing conjugate with samples.
9. Microwell plate reader, single wavelength 450 nm or dual wavelength 450 nm and 630 nm.
10. Microwell aspiration/wash system.

SPECIMEN COLLECTION, TRANSPORTATION AND STORAGE

1. Sample Collection: Either fresh serum or plasma samples can be used for this assay. Blood collected by venipuncture should be allowed to clot naturally and completely. Care should be taken to ensure that the serum samples are clear and not contaminated by microorganisms. Any visible particulate matters in the sample should be removed by centrifugation at 3000 RPM (rounds per minute) for 20 minutes at room temperature or by filtration on 0.22 µm filters. Plasma samples collected into EDTA, sodium citrate or heparin may be tested, but highly lipaemic, icteric, or hemolysed samples should not be used as they can give false results in the assay. Do not heat inactivate samples. This can cause sample deterioration.
2. Transportation and Storage: Store samples at 2-8°C. Samples not required for assaying within 3 days should be stored frozen (-20°C or lower). Avoid multiple freeze-thaw cycles.

SPECIAL INSTRUCTIONS FOR WASHING

1. A good washing procedure is essential to obtain correct and precise analytical data.
2. It is therefore recommended to use a good quality ELISA microplate washer, maintained at the best level of washing performances. In general, no less than 5 automatic washing cycles of 350-400 µL/well are sufficient to avoid false positive reactions and high background.
3. To avoid cross-contaminations of the plate with sample or Enzyme Conjugate, after incubation do not discard the content of the wells but allow the plate washer to aspirate it automatically.
4. Anyway, we recommend calibrating the washing system on the kit itself in order to match the declared analytical performances. Assure that the microplate washer liquid dispensing channels are not blocked or contaminated and sufficient volume of Wash buffer is dispensed each time into the wells.
5. In case of manual washing, we suggest to carry out at least 5 cycles, dispensing 350-400 µL/well and aspirating the liquid for 5times. If poor results

(high background) are observed, increase the washing cycles or soaking time per well.

6. In any case, the liquid aspirated out the strips should be treated with a sodium hypochlorite solution at a final concentration of 2.5% for 24 hours, before liquids are wasted in an appropriate way.
7. The concentrated Washing solution should be diluted 1:20 before use. For one plate, mix 30 mL of the concentrate with 570 mL of water for a final volume of 600 mL diluted Wash Buffer. If less than a whole plate is used, prepare the proportional volume of solution.

PRECAUTIONS AND SAFETY

This kit is intended FOR PROFESSIONAL IN VITRO USE ONLY

The ELISA assay is time and temperature sensitive. To avoid incorrect result, strictly follow the test procedure steps and do not modify them.

1. Do not exchange reagents from different lots or use reagents from other commercially available kits. The components of the kit are precisely matched for optimal performance of the tests.
2. Make sure that all reagents are within the validity indicated on the kit box and of the same lot. Never use reagents beyond the expiry date stated on labels or boxes.
3. Allow the reagents and samples to reach room temperature (18-30°C) before use. Shake reagent gently before use and return to 2-8°C immediately after use.
4. Do not touch the bottom exterior of the wells; fingerprints or scratches may interfere with microwell reading.
5. When reading the results, ensure that the plate bottom is dry and there are no air-bubbles inside the wells.
6. Never allow the microplate wells to dry after the washing step. Immediately proceed to the next step. Avoid the formation of air bubbles when adding the reagents.
7. Avoid assay steps long time interruptions. Assure same working conditions for all the wells.
8. Calibrate the pipette frequently to assure the accuracy. Use different disposal pipette tips for each specimen and reagents in order to avoid cross-contaminations. Never pipette solutions by mouth.
9. The use of automatic pipettes and disposable tips is recommended.
10. Assure that the incubation temperature is 37°C inside the incubator.
11. When adding samples avoid touching the well's bottom with the pipette tip.
12. When reading the absorbance with a plate reader, it is recommended to determine the absorbance at 450 nm or at 450 nm with reference at 630 nm.
13. All specimens from human origin should be considered as potentially infectious. Strict adherence to GLP (Good Laboratory Practice) regulations can ensure the personal safety. Never eat, drink, smoke or apply cosmetics in the assay laboratory.
14. The pipette tips, vials, strips and sample containers should be collected and autoclaved for 1 hour at 121°C or treated with 10% sodium hypochlorite for 30 minutes to decontaminate before any further steps for disposal.

15. The Stop Solution contains 0.5 M H_2SO_4. Use it with appropriate care. Wipe up spills immediately or wash with water if come into contact with the skin or eyes. ProClin 300 used as a preservative can cause sensation of the skin.
16. The enzymatic activity of the Enzyme Conjugate might be affected from dust, reactive chemical and substances like sodium hypochlorite, acids, alkalins etc. Do not perform the assay in the presence of such substances.

ASSAY PROCEDURE

Step 1 Reagents preparation: Allow the reagents to reach room temperature (18-30°C). Check the Wash buffer concentrate for the presence of salt crystals. If crystals have formed in the solution, resolubilize by warming at 37°C until crystals dissolve. Dilute the stock Wash Buffer 1:20 with distilled or deionized water. Use only clean vessels to dilute the buffer.

Step 2 Numbering Wells: Set the strips needed in strip-holder and number sufficient number of wells including three Negative Controls (e.g. B1, C1, D1) two Positive Controls (e.g. E1, F1) and one Blank (e.g. A1 neither samples nor Enzyme Conjugate should be added into the Blank well). Use only number of strips required for the test.

Step 3 Adding Sample and Enzyme Conjugate: Add 50 µL of Positive Control, Negative Control, and Specimen into their respective wells. Note: Use a separate disposal pipette tip for each specimen, Negative Control and Positive Control to avoid cross-contamination. Add 50 µL of Enzyme Conjugate to each well except the Blank and mix by tapping the plate gently.

Step 4 Incubating: Cover the plate with the plate cover and incubate for 60 minutes at 37°C. It is recommended to use water tank to assure the temperature stability and humidity during the incubation. If dry incubator is used, do not open the door frequently.

Step 5 Washing: At the end of the incubation, remove and discard the plate cover. Wash each well 5 times with diluted Wash Buffer. Each time allow the microwells to soak for 30-60 seconds. After the final washing cycle, turn down the strip plate onto blotting paper or clean towel, and tap the plate to remove any remainders.

Step 6 Coloring: Dispense 50 µL of Substrate Solution A and after that 50 µL Substrate Solution B into each well including the Blank. Incubate the plate at 37°C for 15minutes, avoiding light. The enzymatic reaction between the Substrate Solutions and the Enzyme Conjugate will produce blue color in Negative Control and anti-HBc negative sample wells.

Step 7 Stopping Reaction: Using a multichannel pipette or manually add 50 µL Stop Solution into each well and mix gently. Intensive yellow color develops in Negative control and anti-HBc negative sample wells.

Step 8 Measuring the Absorbance: Calibrate the plate reader with the Blank well and read the absorbance at 450 nm. If a dual filter instrument is used, set the reference wavelength at 630 nm. Calculate the Cut-off value and evaluate the results. (Note: read the absorbance within 5 minutes after stopping the reaction).

INTERPRETATION OF RESULTS AND QUALITY CONTROL

Each microplate should be considered separately when calculating and interpreting results of the assay, regardless of the number of plates concurrently processed. The results are calculated by relating each sample optical density (OD) value to the Cut-off value (C.O.) of the plate. If the Cut-off reading is based on single filter plate reader, the results should be calculated by subtracting the Blank well OD value from the print report values of samples and controls. In case the reading is based on Dual filter plate reader, do not subtract the Blank well OD from the print report values of samples and controls.

Calculation of cut-off value (C.O.) = *Nc × 0.5
*Nc = the mean absorbance value for three negative controls.

If one of the Negative control values does not meet the Quality Control Range specifications, it should be discarded and the mean value is calculated again using the remaining two values. If more than one control OD value does not meet the Quality control range specifications, the test is invalid and must be repeated.

Example: of Cut-off calculation:
1. Calculation of Nc

Well No:	B1	C1	D1
Negative controls OD value	1.720	1.715	1.717

Nc=1.717
2. Calculation of Cut-off (C.O.)= 1.729 × 0.5 =0.858

QUALITY CONTROL RANGE

The test results are valid if the Quality Control criteria are verified. It is recommended that each laboratory must establish appropriate quality control system with quality control material similar to or identical with the patient sample being analyzed.

1. The absorbance of the Blank well, which contains only Chromogens and Stop solution, is less than 0.080 at 450 nm.

2. The absorbance value OD of the Negative control must be equal to or greater than 0.800 at 450/630 nm or at 450 nm after blanking.

3. The absorbance value OD of the Positive control must be less than 0.100 at 450/630 nm or at 450 nm after blanking .

INTERPRETATIONS OF THE RESULTS

(S = the individual absorbance (OD) of each specimen)

Negative Results (S/C.O.>1):

Samples giving an absorbance greater than the Cut-off value are considered negative, which indicates that no antibodies to HBV core antigen have been detected using this anti-HBc ELISA kit. This result should not be used alone to establish the infection state.

Positive Results (S/C.O.≤1):

Samples giving absorbance less than or equal to the Cut-off value are initially reactive for this assay, which indicates that antibodies to HBV core antigen have probably been detected with this anti-HBc ELISA kit. Any initially reactive samples must be retested in duplicates. Repeatedly reactive samples can be considered positive for anti-HBc. A positive result with anti-HBc detection is an indication of acute HBV infection. Monitoring of anti-HBc concentrations can be used in follow up of chronic HBV patients. However, any positive result should not be used alone to establish the infection state.

Borderline (S/C.O.=0.9-1.1):

Samples with absorbance to Cut-off ratio between 0.9 and 1.1 are considered borderline samples and retesting is recommended. Repeatedly reactive samples can be considered positive for anti-HBc.

TEST PERFORMANCE AND EXPECTED RESULTS

Analytical Endpoint Sensitivity: 0.8PEI U/mL

The **clinical specificity** of this assay has been determined by a panel of samples obtained from 1683 healthy blood donors and 145 undiagnosed hospitalized patients. The Repeatedly reactive samples and samples confirmed positive with the reference test were not included in the calculation of the specificity.

The **clinical sensitivity** of this anti-HBc ELISA kit have been calculated by a panel of samples obtained from 975 hepatitis B patients with well-characterized clinical history based upon reference assays for detection of HBsAg, HBeAg, anti-HBs, anti-HBe, and anti-HBc. This panel included samples from acute, chronic and recovered hepatitis B patients. Licensed anti-HBc ELISA test was used as a confirmatory assay. The evaluation results are given below. Results obtained in individual laboratories may differ.

Specificity	Samples	-	+	Confirmed positive	**Specificity**	False Positive
Blood donors	1683	566	1117	1115	99.64%	2
Hospitalized patients	145	80	65	65	100%	0
TOTAL	**1828**	**646**	**1182**	**1180**	**99.82**	**2**

Sensitivity	Samples	-	+	Confirmed positive	**Sensitivity**	False Negative
Acute	429	11	417	418	99.76%	1
Chronic	105	0	105	105	100%	0
Recovery	441	5	436	436	100%	0
TOTAL	**975**	**16**	**958**	**959**	**99.92**	**1**

Analytical Specificity:

1. No cross reactivity observed with samples from patients infected with HAV, HCV HIV, CMV, and TP.
2. No interference from rheumatoid factors up to 2000U/mL observed during clinical testing.
3. The assay performance characteristics are unaffected from elevated concentrations of bilirubin, hemoglobin, and triolein.
4. Frozen specimens have been tested to check for interferences due to collection and storage.

Reproducibility	No runs	**Within run**		**Between run**	
		Mean OD	CV%	Mean OD	CV%
Weak positive	10	0.639	5.8%	0.645	6.4%
Moderate positive	10	0.394	7.4%	0.404	8.0%
Strong positive	10	0.012	21%	0.017	22%
Negative control	10	1.768	4.5%	1.702	4.6%

LIMITATIONS

1. Non-repeatable positive result may occur due to the general biological and biochemical characteristics of ELISA assays. The test is designed to achieve very high performance characteristics of sensitivity and specificity. However, in very rare cases some HBV mutants or subtypes can remain undetectable. Antibodies may be undetectable during the early stages of the disease and in some immunosuppressed individuals.
2. Any positive results must be interpreted in conjunction with patient clinical information and other laboratory testing results.
3. Common sources for mistakes: kits beyond the expiry date, inappropriate washing procedures, contaminated reagents, incorrect assay procedure steps, insufficient aspiration during washing, failure to add samples or reagents, equipment, timing, volumes, sample nature and quality.
4. The prevalence of the marker will affect the assay's predictive values.

VALIDITY

Please do not use this kit beyond the expiry date indicated on the kit box and reagent labels!

REFERENCES

1. Hansson, B.G. (1977). Persistence of Serum Antibody to Hepatitis B Core Antigen. J. Clin. Microbiol. 6, 209.
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3. Hoofnagle, J.H., Gerety, R.J., Ni, L.Y. and Barker, L.F. (1974).
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5. Mushahwar, I.K.,Dienstag,J .L.,Polesky,H.F et al (1981) Interpretation of Various Serological Profiles of Hepatitis B Virus Infection.Am J. Clin Pathol,76,773

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ELISA **E**NZYME **L**INKED **I**MMUNO**S**ORBENT **A**SSAY

Microwell Method

HBeAg

REF Z00362

For in vitro Diagnostic Use

P r o d u c t I n s e r t

Enzyme Linked Immunosorbent Assay for the **cut - off** determination of HBeAg in human serum or plasma.

Microwell Method - 96 wells

(12 x 8-well Antigen coated Strips)

Individual breakaway

GENERAL INFORMATION

- **Wavelength**

  Measurement Filter: 450 nm

  Optional Reference Filter: 630 nm

- **Enzyme Conjugate**

  HRP (Horseradish Peroxidase)

- **Substrate**

  TMB (3,3´,5,5´-Tetramethyl-benzidine)

- **Sample**

  Serum or Plasma

- **Incubation Time**

  75 minutes at 37°C (60/15)

- **Shelf life and Stability of Kit Components**

  Kit: 12 months from production date.

  Kit Components: see expiration date on the label

KIT COMPONENTS

MICROWELL PLATE	1	The plate is sealed in aluminium pouch with desiccant. **12×8-well** strips per plate. Each well contains monoclonal antibodies to HBeAg. The microwell strips can be broken to be used separately. Place unused wells in the plastic sealable storage bag together with desiccant and return to 2-8°C.
POSITIVE CONTROL	1	1 mL per vial. Recombinant, non-infective HBeAg diluted in Protein-stabilized buffer. Preservatives: 0.1% ProClin 300. Ready to use as supplied. Once open, stable for one month at 2-8°C.
NEGATIVE CONTROL	1	1 mL per vial. Protein-stabilized buffer tested non-reactive for HBeAg. Preservatives: 0.1% ProClin 300. Ready to use as supplied. Once open, stable for one month at 2-8°C.
ENZYME CONJUGATE	1	6.5 mL per vial. Horseradish peroxidase-conjugated anti-HBe antibodies**.** Ready to use as supplied. Once open, stable for one month at 2-8°C.
SUBSTRATE SOLUTION A	1	7 mL per vial. Urea peroxide solution. Ready to use as supplied. Once open, stable for one month at 2-8°C
SUBSTRATE SOLUTION B	1	7 mL per vial. TMB solution. Tetramethylbenzidine dissolved in citric acid. Ready to use as supplied. Once open, stable for one month at 2-8°C
STOP SOLUTION	1	7 mL per vial. Diluted sulfuric acid solution (0.5M H_2SO_4). Ready to use as supplied.
WASH BUFFER	1	30 mL per bottle. pH 7.4 20x PBS (Containing Tween-20 as a detergent). **DILUTE BEFORE USE:** The concentrate must be diluted **1:20** with distilled/deionized water before use. Once diluted, stable for one week at room temperature or for two weeks at 2-8°C.
CARDBOARD PLATE COVER SHEETS	1	To cover the plates during incubation and prevent evaporation or contamination of the wells.

MATERIALS REQUIRED BUT NOT PROVIDED

1. Freshly distilled or deionized water.
2. Disposable gloves and timer.
3. Appropriate waste containers for potentially contaminated materials.
4. Disposable V-shaped troughs.
5. Dispensing system and/or pipette (single or multichannel), disposable pipette tips.
6. Absorbent tissue or clean towel.
7. Dry incubator or water bath, 37±0.5°C.
8. Microshaker for dissolving and mixing conjugate with samples.
9. Microwell plate reader, single wavelength 450nm or dual wavelength 450nm and 630nm.
10. Microwell aspiration/wash system.

SUMMARY AND EXPLANATION

Hepatitis B virus (HBV) is an enveloped, double- stranded DNA virus belonging to the Hepadnaviridae family and is recognized as the major cause of blood transmitted hepatitis together with hepatitis C virus (HCV). Infection with HBV induces a spectrum of clinical manifestations ranging from mild, inapparent disease to fulminant hepatitis, severe chronic liver disease, which in some cases can lead to cirrhosis and carcinoma of the liver. Classification of a hepatitis B infection requires the identification of several serological markers expressed during three phases (incubation, acute and convalescent) of the infection. Now several diagnostic tests are used for screening, clinical diagnosis and management of the disease.

Hepatitis B-“e”-antigen is a virus protein to be intimately associated with hepatitis B virus replication, indicating high degree of infectivity. HBeAg appears shortly after HBsAg and is detectable for few days to several weeks. During treatment and recovery, the titer of HBeAg declines and is replaced by the corresponding antibody (anti-HBe). In chronic hepatitis B infections, elevated levels of HBeAg can be detected for years, which is a marker for large quantity of virus. In some chronic HBsAg positive patients, HBeAg is undetectable due to HBV mutations suggesting for low level of viral replication. If HBeAg is considered a specific marker of infectivity, the presence of anti-HBeAg antibody in blood is recognized to be a clinical sign of recovery from the infection.

TEST PRINCIPLES

This HBeAg ELISA kit uses polystyrene microwell strips pre-coated with monoconal antibodies specific to HBeAg. Patient’s serum or plasma sample is added to the microwell together with a second monoclonal antibody conjugated with horseradish peroxidase (HRP). During incubation, the specific immunocomplex formed in case of presence of HBeAg in the sample is captured on the solid phase. After washing to remove sample and unbound HRP-Conjugate, Chromogen solutions containing Tetramethylbenzidine (TMB) and urea peroxide are added to the wells. In presence of the antibody-antigen-antibody (HRP) “sandwich“ complex, the colorless Chromogens are hydrolyzed by the bound HRP conjugate to a blue colored product. The blue color turns yellow after stopping the reaction with sulfuric acid. The amount of color can be measured and is proportional to the amount of antibody in the sample. Wells containing samples negative for HBsAg remain colorless.

Assay principle scheme: Double antibody sandwich ELISA

Ab(p)+Ag(s)+(Ab)ENZ	**→**	**[Ab(p)–Ag(s)–(Ab)ENZ]**	**→**	**blue**	**→**	**yellow color**	**(+)**
Ab(p)+ (Ab)ENZ	**→**	**[Ab(p)**	**→**			**no color**	**(-)**
Incubation	**Immobilized Complex**		**Coloring**		**Results**		
60min.				**15min.**			

Ab(p)–pre-coated anti–HBe antibodies;

Ag(s)–HBeAg antigens in sample;

(Ab)ENZ–HRP conjugated anti-HBe antibodies;

SPECIMEN COLLECTION, TRANSPORTATION AND STORAGE

Sample Collection: Either fresh serum or plasma samples can be used for this assay. Blood collected by venipuncture should be allowed to clot naturally and completely. Care should be taken to ensure that the serum samples are clear and not contaminated by microorganisms. Any visible particulate matters in the sample should be removed by centrifugation at 3000 RPM (round per minutes) for 20 minutes at room temperature or by filtration on 0.22 µm filters. Plasma samples collected into EDTA, sodium citrate or heparin may be tested, but highly lipaemic, icteric, or hemolized samples should not be used as they can give false results in the assay. Do not heat inactivate samples. This can cause sample deterioration.

Transportation and Storage: Store samples at 2-8°C. Samples not required for assay within 3 days should be stored frozen (-20°C or lower). Avoid multiple freeze-thaw cycles.

SPECIAL INSTRUCTIONS FOR WASHING

1. A good washing procedure is essential to obtain correct and precise analytical data.
2. It is therefore recommended to use a good quality ELISA microplate washer, maintained at the best level of washing performances. In general, no less than 5 automatic washing cycles of 350-400 µL/well are sufficient to avoid false positive reactions and high background.
3. To avoid contaminations of the plate with sample or Enzyme Conjugate, after incubation do not discard the content of the wells but allow the plate washer to aspirate it automatically.
4. Anyway, we recommend calibrating the washing system on the kit itself in order to match the declared analytical performances. Assure that the microplate washer liquid dispensing channels are not blocked or contaminated and sufficient volume of Wash buffer is dispensed each time into the wells.
5. In case of manual washing, we suggest to carry out 5 cycles, dispensing 350-400 µL/well and aspirating the liquid for 5 times. If poor results (high background) are observed, increase the washing cycles or soaking time per well.
6. In any case, the liquid aspirated out the strips must be treated with a sodium hypochlorite solution at a final concentration of 2.5% for 24 hours, before liquids are wasted in an appropriate way**.**
7. The concentrated Washing Solution must be diluted 1:20 before use. For one plate, mix 60 mL of the concentrate with 1140 mL of water for a final volume of 1200 mL diluted Wash Buffer. If less than a whole plate is used, prepare the proportional volume of solution.

STORAGE AND STABILITY

The components of the kit will remain stable through the expiration date indicated on the label and package when stored between 2-8°C, **do not freeze.** To assure maximum performance of this ELISA kit, protect the reagents from contamination with microorganisms or chemicals during storage.

PRECAUTIONS AND SAFETY

This kit is intended **FOR PROFESSIONAL IN VITRO USE ONLY**

This ELISA assay is time and temperature sensitive. To avoid incorrect result, strictly follow the test procedure steps and do not modify them.

1. Do not exchange reagents from different lots or use reagents from other commercially available kits. The components of the kit are precisely matched for optimal performance of the tests.
2. Make sure all the reagents are within the validity indicated on the kit box and of the same lot. Never use reagents beyond their expiry date stated on labels or boxes.
3. Allow the reagents and samples to reach room temperature (18-25°C) before use. Shake reagent gently before use. Return at 2-8°C immediately after use.
4. Do not touch the bottom exterior of the wells; fingerprints or scratches may interfere with microwell reading.
5. When reading the results, ensure that the plate bottom is dry and there are no air-bubbles inside the wells.
6. Never allow the microplate wells to dry after the washing step. Immediately proceed to the next step. Avoid the formation of air bubbles when adding the reagents.
7. Avoid assay steps long time interruptions. Assure same working conditions for all the wells.
8. Calibrate the pipette frequently to assure the accuracy. Use different disposal pipette tips for each specimen and reagents in order to avoid cross-contaminations. Never pipette solutions by mouth.
9. The use of automatic pipettes and disposable tips is recommended.
10. Assure that the incubation temperature is 37°C inside the incubator.
11. When adding samples avoid, do not touch the well's bottom with the pipette tip.
12. When measuring with a plate reader, it is recommended to determine the absorbance at 450 nm and with reference at 630 nm.
13. All specimens from human origin should be considered as potentially infectious. Strict adherence to GLP (Good Laboratory Practice) regulations can ensure the personal safety. Never eat, drink, smoke, or apply cosmetics in the assay laboratory.
14. The pipette tips, vials, strips and sample containers should be collected and autoclaved for 1 hour at 121°C or treated with 10% sodium hypochlorite for 30 minutes to decontaminate before any further steps for disposal.
15. The Stop solution 0.5 M H_2SO_4 is a strong acid. CORROSIVE. Use it with appropriate care. Wipe up spills immediately or wash with water if come into contact with the skin or eyes. ProClin 300 used as a preservative can cause sensation of the skin.
16. The enzymatic activity of the HRP-Conjugate might be affected from dust and reactive chemical and substances like sodium hypochlorite, acids, alkalins etc. Do not perform the assay in the presence of these substances.

PROCEDURE

Step 1 **Reagents preparation:** Allow the reagents to reach room temperature **(18-30°C)**. Check the Wash buffer concentrate for the presence of salt crystals. If crystals have formed in the solution, resolubilize by warming at 37°C until crystals dissolve. Dilute the stock Wash Buffer **1 to 20** with distilled or deionized water. Use only clean vessels to dilute the buffer.

Step 2 **Numbering Wells:** Set the strips needed in strip-holder and number sufficient number of wells including three Negative Controls **(e.g. B1, C1, D1),** two Positive Controls **(e.g. E1, F1)** and one Blank (**e.g.A1,** neither samples nor Enzyme Conjugate should be added into the Blank well). Use only number of strips required for the test.

Step 3 **Adding Samples and Enzyme Conjugate:** Add **50 µL** of Positive control, Negative control, and specimen into their respective wells. **Note: Use a separate disposal pipette tip for each specimen, Negative Control and Positive Control to avoid cross-contamination.** Add **50 µL Enzyme** Conjugate to each well except the Blank and mix by tapping the plate gently.

Step 4 **Incubating:** Cover the plate with the plate cover and incubate for **60 minutes at 37°C**. It is recommended to use water tank to assure the temperature stability and humidity during the incubation. If dry incubator is used, do not open the door frequently.

Step 5 **Washing:** At the end of the incubation, remove and discard the plate cover. Wash each well **5** times with diluted Wash buffer. Each time allow the microwells to soak for 30-60 seconds. After the final washing cycle, turn down the strips plate onto blotting paper or clean towel, and tap the plate to remove any remainders.

Step 6 **Coloring**: **Dispense 50 µL of Substrate Solution A and after that of 50 µL Substrate Solution B** into each well including the **Blank** and mix by tapping the plate gently. Incubate the plate at **37°C for 15 minutes avoiding light**. The enzymatic reaction between the Substrate Solutions A/B and the Enzyme Conjugate produces blue color in Positive control and HBeAg Positive sample wells.

Step 7 **Stopping Reaction:** Using a multichannel pipette or manually add **50 µL** Stop Solution into each well and mix gently. Intensive yellow color develops in Positive control and HBeAg Positive sample wells.

Step 8 **Measuring the Absorbance:** Calibrate the plate reader with the Blank well and read the absorbance at **450 nm**. If a dual filter instrument is used, set the reference wavelength at **630 nm**. Calculate the Cut-off value and evaluate the results. (**Note:** read the absorbance within **5 minutes** after stopping the reaction.)

INTERPRETATION OF RESULTS AND QUALITY CONTROL

Each microplate should be considered separately when calculating and interpreting results of the assay, regardless of the number of plates concurrently processed. The results are calculated by relating each sample optical density (OD) value to the Cut-off value (C.O.) of the plate. If the Cut-off reading is based on single filter plate reader, the results should be calculated by subtracting the Blank well OD value from the print report values of samples and controls. In case the reading is based on Dual filter plate reader, do not subtract the Blank well OD from the print report values of samples and controls.

Calculation of Cut-off value (C.O.) = *Nc x 2.1

*Nc = the mean absorbance value for three negative controls.

Important: If the mean OD value of the negative control is lower than 0.05, take it as 0.05.

Example:

Calculation of Nc:

Well No	B1	C1	D1
Negative controls OD value	0.02	0.012	0.016

Nc=0.016 (Nc is lower than 0.05 so take it as 0.05)

2. Calculation of Cut-off value:(C.O.) = 0.05 x 2.1= 0.105

If one of the Negative control values does not meet the quality control range specifications, it should be discarded and the mean value is calculated again using the remaining two values. If more than one control OD value does not meet the quality control range specifications, the test is invalid and must be repeated.

Quality Control Range

The test results are valid if the Quality Control criteria are verified. It is advisable that each laboratory must establish appropriate quality control system with quality control material similar to or identical with the patient sample being analyzed.

1. The absorbance of the Blank well, which contains only Chromogens and Stop solution, is less than 0.080 at 450 nm.
2. The absorbance value OD of the Positive control must be equal to or greater than 0.800 at 450/630 nm or at 450nm after blanking.
3. The absorbance value OD of the Negative control must be less than 0.100 at 450/630 nm or at 450 nm after blanking.

Interpretations of results:
(S = the individual absorbance (OD) of each specimen)

Negative Results (S/C.O.<1): Samples giving absorbance less than the Cut-off value are negative for this assay, which indicates that no hepatitis B-e-antigen has been detected with this HBeAg ELISA kit. This result should not be used alone to establish the infection state.

Positive Results(**S/C.O.≥1):** Samples giving an absorbance greater than or equal to the Cut-off value are initially reactive, which indicates that HBV-e-antigen has probably been detected using this HBeAg ELISA kit. Any initially reactive samples must be retested in duplicates. Repeatedly reactive samples can be considered positive for HBeAg. This result should not be used alone to establish the infection state.

Borderline (S/C.O.=0.9-1.1): Samples with absorbance to Cut-off ratio between 0.9 and 1.1 are considered borderline samples and retesting is recommended. Repeatedly reactive samples can be considered positive for HBeAg.

TEST PERFORMANCE AND EXPECTED RESULTS

Analytical Endpoint Sensitivity: 0.3PEI U/mL

Clinical Specificity: The clinical specificity of this kit has been determined by a panel of samples obtained from 4360 healthy blood donors and 150 undiagnosed hospitalized patients. The repeatedly reactive samples and samples confirmed positive with the reference test were not included in the calculation of specificity.

Clinical Sensitivity: The clinical sensitivity of this HBeAg ELISA kit was calculated by a panel of samples obtained from 813 hepatitis B patients with well-characterized clinical history based upon reference assays for detection of HBsAg, HBeAg, anti-HBs, anti-HBe, and anti-HBc. Licensed HBeAg ELISA was used as a confirmatory assay. The evaluation results are given below. Results obtained in individual laboratories may differ.

Specificity	Samples	-	+	Confirmed positive	**Specificity**	False positive
Blood donors	4360	4346	14	9	99.86%	5
Hospitalized Patients	150	132	18	18	100%	0
TOTAL	4510	4478	32	32	99.93	5
Sensitivity	Samples	-	+	Confirmed positive	**Sensitivity**	False Negatives
Acute	378	172	206	206	100%	0
Chronic	347	162	185	185	100%	0
Recovery	88	63	25	25	100%	0
TOTAL	813	397	416	416	100%	0

Analytical Specificity: No cross reactivity was observed with samples from patients infected with HAV, HCV, HIV, CMV, and TP. No interference from rheumatoid factors up to 2000U/ml and no high dose hook effect up to HBeAg concentrations of 150.000 NCU were observed. The assay performance characteristics are unaffected from elevated concentrations of bilirubin, hemoglobin, and triolein. Frozen specimens have been tested to check for interferences due to collection and storage.

Reproducibility		Within run		Between run	
Specimen Type	Runs	Mean OD	CV%	Mean OD	CV%
Weak positive	10	0.450	9.0%	0.421	9.7%
Moderate positive	10	1.53	8.1%	1.47	8.5%
Strong positive	10	2.3	6.3%	2.3	6.7%
Positive control	10	2.4	5.5%	2.4	5.7%

LIMITATIONS

1. Non-repeatable positive result may occur due to the general biological and biochemical characteristics of ELISA assays. The test is designed to achieve performance characteristics of high sensitivity and specificity. However, in very rare cases some HBV mutants or subtypes can remain undetectable. Antibodies may be undetectable during the early stages of the disease and in some immunosuppressed individuals.
2. Any positive result must be interpreted in conjunction with patient clinical information and other laboratory testing results.
3. Common sources for mistakes: kits beyond the expiry date, bad washing procedures, contaminated reagents, incorrect assay procedure steps, insufficient aspiration during washing, failure to add samples or reagents, equipment, timing, volumes, sample nature and quality.
4. The prevalence of the marker will affect the assay's predictive values.

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4. Lindberg J., Frosner G., Hansson B.G. et al. Serologic markers

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ELISA ENZYME **L**INKED **I**MMUNO**S**ORBENT **A**SSAY

Microwell Method

HBsAb

REF: Z00361

For in vitro Diagnostic Use

P r o d u c t I n s e r t

Enzyme Linked Immunosorbent Assay for the **cut–off** determination of Antibodies to Hepatitis B surface antigen (HBsAb) in human serum or plasma. It is intended for use in medical laboratories for diagnosis and management of patients related to infection with hepatitis B virus.

Microwell Method - 96 wells

(12 x 8-well Antigen coated strips

Individual breakaway)

INTRODUCTION

Hepatitis B virus (HBV) is an enveloped, double-stranded DNA virus belonging to the Hepadnaviridae family and is recognized as the major cause of blood transmitted hepatitis together with hepatitis C virus (HCV). Infection with HBV induces a spectrum of clinical manifestations ranging from mild, unapparent disease to fulminant hepatitis, severe chronic liver diseases, which in some cases can lead to cirrhosis and carcinoma of the liver. Classification of a hepatitis B infection requires the identification of several serological markers expressed during three phases (incubation, acute and convalescent) of the infection. Now several diagnostic tests are used for screening, clinical diagnosis and management of the disease.
Hepatitis B surface antigen (HBsAg), which appears shortly after infection, is an important protein of the envelope structure of the virus. HBsAg is a key serological marker for detection and diagnosis of HBV and is detectable in blood during the acute phase of the disease. Clearance after treatment shows recovery while presence for more than half year after infection indicates possible progression to long chronic carrier stage. During the acute phase of the infection, strong immunological response develops and increasing titers of HBsAg neutralizing antibodies (anti-HBs) are marker for recovery. The serological detection of anti-HBs has become important method for the follow up of patients infected by HBV, prospective prevalence studies, and the monitoring of recipients upon vaccination with synthetic and natural HBsAg based vaccines.

PRINCIPLE OF THE ASSAY

For detection of anti-HBs, this kit uses antigen “sandwich” ELISA method where polystyrene microwell strips are pre-coated with recombinant HBsAg. Patient’s serum or plasma sample is added to the microwells together with a second HBsAg conjugated to Horseradish Peroxidase (Enzyme Conjugate). In case of presence of anti-HBs in the sample, the pre-coated and conjugated antigens will be bound to the two variable domains of the antibody and during incubation, the specific immunocomplex formed is captured on the solid phase. After washing to remove sample serum proteins and unbound Enzyme Conjugates, Substrate Solutions containing Tetramethylbenzidine (TMB) and urea peroxide are added to the wells. In presence of the antigen-antibody-antigen (HRP) “sandwich” complex, the colorless Substrate Solutions are hydrolyzed by the bound Enzyme Conjugate to a blue-colored product. The blue color turns yellow after stopping the reaction with sulfuric acid. The amount of color intensity can be measured and is proportional to the amount of antibody captured in the wells, and to the sample respectively. Wells containing samples negative for anti-HBs remain colorless.

CONTENT OF THE KIT

Microwell Plate	Blank microwell strips fixed on white strip holder. The plate is sealed in aluminum pouch with desiccant. Each well contains recombinant HBsAg. The microwell strips can be broken to be used separately. Place unused wells or strips in the provided plastic sealable storage bag together with the desiccant and return to 2-8°C. Once opened, stable for 4 weeks at 2-8°C.
Negative Control	1x 1 mL, yellowish liquid filled in a vial with green screw cap. Protein-stabilized buffer tested non-reactive for anti-HBs. Preservative: 0.1 % ProClin™ 300. Ready to use as supplied. Once opened, stable for 4 weeks at 2-8°C.
Positive Control	1x 1 mL, Red-colored liquid filled in a vial with red screw cap. anti-HBs diluted in protein-stabilized buffer. Preservative: 0.1 % ProClin™ 300. Ready to use as supplied. Once opened, stable for 4 weeks at 2-8°C.
Enzyme Conjugate	1x 6.5 mL, red-colored liquid in a white vial with red screw cap. Horseradish peroxidase-conjugated HBsAg. Preservative: 0.1 % ProClin™ 300. Ready to use as supplied. Once opened, stable for 4 weeks at 2-8°C.
Wash Buffer	1x 30 mL, Colorless liquid filled in a white bottle with white screw

	cap. Buffer solution containing surfactant. Detergent: Tween-20. The concentrate must be diluted **1 to 20** with distilled/deionized water before use. Once diluted, stable for 1 week at room temperature, or for 2 weeks when stored at 2-8°C.
Substrate Solution A	1x 7 mL, colorless liquid filled in a white vial with green screw cap. Urea peroxide solution. Ready to use as supplied. Once opened, stable for 4 weeks at 2-8°C.
Substrate Solution B	1x 7 mL, colorless liquid filled in a black vial with black screw cap. TMB (Tetramethyl benzidine), N,N- dimethylformamide. Ready to use as supplied. Once opened, stable for 4 weeks at 2-8°C.
Stop Solution	1x 7 mL, colorless liquid in a white vial with white screw cap. Diluted sulfuric acid solution (0.5 M H_2SO_4). Ready to use as supplied. Once opened, stable for 4 weeks at 2-8°C.

MATERIALS REQUIRED BUT NOT PROVIDED

- Freshly distilled or deionized water
- Disposable gloves and timer
- Appropriate waste containers for potentially contaminated materials
- Dispensing system and/or pipette
- Disposable pipette tips
- Absorbent tissue or clean towel
- Dry incubator or water bath, 37±1°C
- Plate reader, single wavelength 450 nm or dual wavelength 450/600-650 nm
- Microwell aspiration/wash system

STORAGE AND STABILITY

The components of the kit will remain stable through the expiration date indicated on the label and package when stored between 2-8°C, do not freeze.
To assure maximum performance of this ELISA, protect the reagents from contamination with microorganism or chemicals during storage.

SAMPLE COLLECTION

1. Specimen Collection: No special patient's preparation required. Collect the specimen in accordance with the normal laboratory practice. Either fresh serum or plasma specimens can be used with this assay. Blood collected by venipuncture should be allowed to clot naturally and completely – the serum/plasma must be separated from the clot as early as possible as to avoid haemolysis of the RBC. Care should be taken to ensure that the serum specimens are clear and not contaminated by microorganisms. Any visible particulate matters in the specimen should be removed by centrifugation at 3000 rpm (round per minutes) for 20 minutes at room temperature or by filtration.
2. Plasma specimens collected into EDTA, sodium citrate or heparin can be tested, but highly lipaemic, icteric, or hemolytic specimens should not be used as they can give false results in the assay. Do not heat-inactivate specimens. This can cause deterioration of the target analyte. Samples with visible microbial contamination should never be used.
3. This ELISA is intended ONLY for testing of individual serum or plasma samples. Do not use the assay for testing of cadaver samples, saliva, urine or other body fluids, or pooled (mixed) blood.
4. Transportation and Storage: Store specimens at 2-8°C. Specimens not required for assaying within 1 week should be stored frozen (-20°C or lower). Multiple freeze-thaw cycles should be avoided. For shipment, samples should be packaged and labeled in accordance with the existing local and international regulations for transportation of clinical samples and ethological agents.

PRECAUTIONS AND SAFETY

TO BE USED ONLY BY QUALIFIED PROFESSIONALS.
The ELISA assays are time and temperature sensitive. To avoid incorrect result, strictly follow the test procedure steps and do not modify them.

1. Do not exchange reagents from different lots or use reagents from other commercially available kits. The components of the kit are precisely matched for optimal performance of the tests.
2. Make sure that all reagents are within the validity indicated on the kit box and of the same lot. Never use reagents beyond their expiry date stated on labels or boxes.
3. CAUTION - CRITICAL STEP: Allow the reagents and specimens to reach room temperature (18-30°C) before use. Shake reagent gently before use. Return at 2-8°C immediately after use.
4. Use only sufficient volume of sample as indicated in the procedure steps. Failure to do so may cause in low sensitivity of the assay.
5. Do not touch the exterior bottom of the wells; fingerprints or scratches may interfere with the reading. When reading the results, ensure that the plate bottom is dry and there are no air bubbles inside the wells.
6. Never allow the microplate wells to dry after the washing step. Immediately proceed to the next step. Avoid the formation of air bubbles when adding the reagents.
7. Avoid long time interruptions of assay steps. Assure same working conditions for all wells.
8. Calibrate the pipette frequently to assure the accuracy of samples/reagents dispensing. Use different disposal pipette tips for each specimen and reagents in order to avoid cross-contaminations.
9. Assure that the incubation temperature is 37°C inside the incubator.
10. When adding specimens, do not touch the well's bottom with the pipette tip.
11. When measuring with a plate reader, determine the absorbance at 450 nm or at 450/600-650 nm.
12. The enzymatic activity of the Enzyme Conjugate might be affected from dust and reactive chemical and substances like sodium hypochlorite, acids, alkalis etc. Do not perform the assay in the presence of these substances.
13. If using fully automated equipment, during incubation, do not cover the plates with the plate cover. The tapping out of the remainders inside the plate after washing, can also be omitted.
14. All specimens from human origin should be considered as potentially infectious. Strict adherence to GLP (Good Laboratory Practice) regulations can ensure the personal safety.
15. WARNING: Materials from human origin may have been used in the preparation of the Negative Control of the kit. These materials have been tested with tests kits with accepted performance and found negative for HBsAg and antibodies to HIV 1/2, HCV, TP. However, there is no analytical method that can assure that infectious agents in the specimens or reagents are completely absent. Therefore, handle reagents and specimens with extreme caution as if capable of transmitting infectious diseases. Bovine derived sera have been used for stabilizing of the positive and negative controls. Bovine serum albumin (BSA) and fetal calf sera (FCS) are derived from animals from BSE/TSE free-geographical areas.
16. Never eat, drink, smoke, or apply cosmetics in the assay laboratory. Never pipette solutions by mouth.
17. Chemical should be handled and disposed of only in accordance with the current GLP (Good Laboratory Practices) and the local or national regulations.
18. The pipette tips, vials, strips and specimen containers should be collected and autoclaved for not less than 2 hours at 121°C or treated with 10% sodium hypochlorite for 30 minutes to decontaminate before any further steps of disposal. Solutions containing sodium hypochlorite should NEVER be autoclaved. Materials Safety Data Sheet (MSDS) available upon request.
19. Some reagents may cause toxicity, irritation, burns or have carcinogenic effect as raw materials. Contact with the skin and the mucosa should be avoided but not limited to the following reagents: Stop solution, the Chromogens, and the Wash buffer.
20. The Stop solution 0.5 M H_2SO_4 is an acid. Use it with appropriate care. Wipe up spills immediately and wash with water if come into contact with the skin or eyes.
21. ProClin^{TM}300 0.1% used as preservative, can cause sensation of the skin. Wipe up spills immediately or wash with water if come into contact with the skin or eyes.

INDICATIONS OF INSTABILITY DETERIORATION OF THE REAGENT: Values of the Positive or Negative controls, which are out of the indicated quality control range, are indicators of possible deterioration of the reagents and/or operator or equipment errors. In such case, the results should be considered as invalid and the samples must be retested. In case of constant erroneous results and proven deterioration or instability of the reagents, immediately substitute the reagents with new one or contact Wantai technical support for further assistance.

WASHING INSTRUCTIONS

1. A good washing procedure is essential to obtain correct and precise analytical data.
2. It is therefore recommended to use a good quality ELISA microplate washer, maintained at the best level of washing performances. In general, no less than 5 automatic washing cycles of 350-400 µL/well are sufficient to avoid false positive reactions and high background.
3. To avoid cross-contaminations of the plate with sample or Enzyme Conjugate, after incubation do not discard the content of the wells but allow the plate washer to aspirate it automatically.
4. Anyway, we recommend calibrating the washing system on the kit itself in order to match the declared analytical performances. Assure that the microplate washer liquid dispensing channels are not blocked or contaminated and sufficient volume of Wash buffer is dispensed each time into the wells.
5. In case of manual washing, we suggest to carry out at least 5 cycles, dispensing 350-400 µL/well and aspirating the liquid for 5 times. If poor results (high background) are observed, increase the washing cycles or soaking time per well.
6. In any case, the liquid aspirated out the strips should be treated with a sodium hypochlorite solution at a final concentration of 2.5% for 24 hours, before liquids are wasted in an appropriate way.
7. The concentrated Washing solution should be diluted 1:20 before use. For one plate, mix 30 mL of the concentrate with 570 mL of water for a final volume of 600 mL diluted Wash Buffer. If less than a whole plate is used, prepare the proportional volume of solution.

ASSAY PROCEDURE

Step 1 **Reagents preparation:** Allow the reagents to reach room temperature **(18-30°C)**. Check the Wash buffer concentrate for the presence of salt crystals. If crystals have formed in the solution, resolubilize by warming at 37°C until crystals dissolve. Dilute the stock Wash Buffer **1:20** with distilled or deionized water as indicated in the instructions for washing. Use only clean vessels to dilute the buffer.

Step 2 **Numbering Wells:** Set the strips needed in strip-holder and number sufficient number of wells including three Negative controls **(e.g. B1, C1, D1)**, two Positive controls **(e.g. E1, F1)** and one Blank (**e.g. A1**, neither samples nor Enzyme Conjugate should be added into the Blank well). Use only the number of strips required for the test.

Step 3 **Adding Sample and Enzyme Conjugate:** Add **50 µL** of Positive control, Negative control, and Specimen into their respective wells. **Note: Use a separate disposal pipette tip for each specimen, Negative Control and Positive Control as to avoid cross-contamination.** Add **50 µL Enzyme Conjugate** to each well except the Blank and mix by tapping the plate gently.

Step 4 **Incubating:** Cover the plate with the plate cover and incubate for **30 minutes at 37°C**. It is recommended to use water tank to assure the temperature stability and humidity during the incubation. If dry incubator is used, do not open the door frequently.

Step 5 **Washing:** At the end of the incubation, remove and discard the plate cover. Wash each well **5** times with diluted Wash buffer. Each time allow the microwells to soak for 30-60 seconds. After the final washing cycle, turn down the strip plate onto blotting paper or clean towel, and tap the plate to remove any remainders.

Step 6 **Coloring:** Dispense **50 µL of Substrate Solution A and after that 50 µL of Substrate Solution B** into each well including the **Blank**, and mix by tapping the plate gently. Incubate the plate at **37°C for 15 minutes avoiding light**. The enzymatic reaction

between the Substrate Solutions and the Enzyme Conjugate produces blue color in Positive control and in anti-HBs Positive sample wells.

Step 7 **Stopping Reaction:** Using a multichannel pipette or manually add **50 µL** Stop Solution into each well. Intensive yellow color develops in Positive control and anti-HBs Positive sample wells.

Step 8 **Measuring the Absorbance:** Calibrate the plate reader with the Blank well and read the absorbance at **450 nm**. If a dual filter instrument is used, set the reference wavelength at **630 nm**. Calculate the Cut-off value and evaluate the results. (**Note:** read the absorbance within **5 minutes** after stopping the reaction)

QUALITY CONTROL AND CALCULATION OF RESULTS

Each microplate should be considered separately when calculating and interpreting results of the assay, regardless of the number of plates concurrently processed. The results are calculated by relating each sample optical density (OD) value to the Cut-off value (C.O.) of the plate. If the Cut-off reading is based on single filter plate reader, the results should be calculated by subtracting the Blank well OD value from the print report values of samples and controls. In case the reading is based on Dual filter plate reader, do not subtract the Blank well OD from the print report values of samples and controls.

Calculation of Cut-off value:
Cut-off value (C.O.) = *Nc × 2.1 *Nc = the mean absorbance value for three negative controls.
Important: If the mean OD value of the negative control is lower than 0.05, take it as 0.05.

Quality Control (Assay validation): The test results are valid if the Quality Control criteria are fulfilled. It is recommended that each laboratory must establish appropriate quality control system with quality control material similar to or identical with the patient sample being analyzed.

- The A value of the Blank well, which contains only Chromogen and Stop solution, is < 0.080 at 450 nm.
- The A values of the Positive Control must be ≥ 0.800 at 450/600~650nm or at 450nm after blanking.
- The A values of the Negative Control must be ≤ 0.100 at 450/600~650nm or at 450nm after blanking.

If one of the Negative Control A values does not meet the Quality Control criteria, it should be discarded and the mean value calculated again using the remaining two values. If more than one Negative control A values do not meet the Quality Control Range specifications, the test is invalid and must be repeated.

INTERPRETATIONS OF THE RESULTS

(S = the individual absorbance (OD) of each specimen)

Negative Results (**S/C.O.<1):** samples giving absorbance less than the Cut-off value are negative for this assay, which indicates that no antibodies to hepatitis B virus surface antigen have been detected with this anti-HBs ELISA kit. Therefore, there are no indications for past infection and the individual is not immune to infection with HBV.

Positive Results (S/C.O.≥1): samples giving an absorbance greater than or equal to the Cut-off value are initially reactive, which indicates that antibodies to HBV surfaces antigen have been detected using this anti-HBs ELISA kit. Retesting in duplicates of any reactive samples is recommended. Repeatedly reactive samples can be considered positive for anti-HBs. Elevated concentrations of anti-HBs are indication for recovery and immunity to HBV.

Borderline (S/C.O.=0.9-1.1): samples with absorbance to Cut-off ratio between 0.9 and 1.1 are considered borderline and retesting of these samples in duplicates is recommended to confirm the results. Repeatedly positive samples can be considered positive for antibodies to HBsAg.

Follow-up, confirmation and supplementary testing of any positive specimen with other analytical system is required. Clinical diagnosis should not be established based on a single test result. It should integrate clinical and other laboratory data and findings.

TEST PERFORMANCE AND EXPECTED VALUES

Analytical Endpoint Sensitivity (lower detection limits)**:** This assay shows sensitivity near the Cut-off of 5 mIU/mL.

Clinical Specificity: The clinical specificity of the assay has been determined by a panel of samples obtained from 1500 healthy blood donors and 250 undiagnosed hospitalized patients.

Specificity	Samples			True positive	Specificity	False positive
	No.	-	+			
Blood Donors	1500	869	631	630	99.89%	1
Hospitalized Patients	250	140	110	109	99.29%	1
TOTAL	1750	1009	741	739	99.80%	2

Clinical Sensitivity: The clinical sensitivity of the assay has been calculated by a panel of samples obtained from 580 hepatitis B patients with well-characterized clinical history based upon reference assays for detection of HBsAg, HBeAg, anti-HBs, anti-HBe, and anti-HBc. Licensed anti-HBs ELISA test was applied as a confirmatory assay. For establishing the test performance characteristics during monitoring of post-vaccination antibody response, additional group of samples from 200 individuals receiving HBV vaccine was tested for anti-HBs.

Sensitivity	Samples			True positive	Sensitivity	False negatives
	No.	-	+			
Acute	350	345	5	5	100%	0
Chronic	130	130	0	0	100%	0
Recovery	100	5	95	95	100%	0
Vaccine recipients	200	7	193	193	100%	0
TOTAL	780	486	293	293	100%	0

Analytical Specificity:

1. No cross reactivity observed with samples from patients infected with HAV, HCV, HIV, CMV, TP.
2. No interference was observed from rheumatoid factors up to 2000 U/mL.
3. The assay performance characteristics are unaffected from elevated concentrations of bilirubin, hemoglobin, and triolein.
4. No high dose hook effect up to 150,000 mIU/mL.
5. Frozen specimens have been tested too to check for interferences due to collection and storage.

LIMITATIONS

1. Positive results must be confirmed with another available method and interpreted in conjunction with the patient clinical information.
2. Antibodies may be undetectable during the early stage of the disease and in some immunosuppressed individuals. In very rare cases some HBV mutants or subtypes can remain undetectable. A negative result with an antibody detection test does not preclude the possibility of infection.
3. If, after retesting of the initially reactive samples, the assay results are negative, these samples should be considered as non-repeatable (false positive) and interpreted as negative.

As with many very sensitive ELISA assays, false positive results can occur due to the several reasons, most of which are related but not limited to inadequate washing step.

4. The most common assay mistakes are: using kits beyond the expiry date, bad washing procedures, contaminated reagents, incorrect assay procedure steps, insufficient aspiration during washing, failure to add specimens or reagents, improper operation with the laboratory equipment, timing errors, the use of highly hemolyzed specimens or specimens containing fibrin, incompletely clotted serum specimens.
5. The prevalence of the marker will affect the assay's predictive values.
6. This kit is intended ONLY for testing of individual serum or plasma samples. Do not use it for testing of cadaver samples, saliva, urine or other body fluids, or pooled (mixed) blood.
7. This kit is a qualitative assay and the results cannot be used to measure antibody concentration.

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HBsAg Sensitive ELISA

(en) English

REF **Z12360**

96

Content

- 1 Microwell Plate: 96 wells (12x 8-well antibody coated strips, individual breakaway)
- 1x 1 mL Positive Control
- 1x 1 mL Negative Control
- 1x 6 mL Enzyme Conjugate
- 1x 5 mL Specimen Diluent
- 1x 6 mL Substrate Solution A
- 1x 6 mL Substrate Solution B
- 1x 6 mL Stop Solution
- 1x 30 mL Wash Buffer
- 3 Cardboard Plate Covers
- 1 Plastic Bag
- 1 Package Insert
- 1 Certificate of Analysis

For professional in vitro diagnostic use only.

INTENDED USE

HBsAg Sensitive ELISA is an enzyme-linked immunosorbent assay (ELISA) for the qualitative detection of Hepatitis B surface antigen (HBsAg) in human serum or plasma. It is intended for the screening of blood donors and for the diagnosis of patients related to infection with Hepatitis B virus.

DIAGNOSTIC SIGNIFICANCE

Hepatitis B virus (HBV) is an enveloped, double-stranded DNA virus belonging to the *Hepadnaviridae* family and is recognized as the major cause of blood transmitted hepatitis together with hepatitis C virus (HCV). Infection with HBV induces a spectrum of clinical manifestations ranging from mild, unapparent disease to fulminant hepatitis, severe chronic liver diseases, which in some cases can lead to cirrhosis and carcinoma of the liver. Classification of a hepatitis B infection requires the identification of several serological markers expressed during three phases (incubation, acute and convalescent) of the infection. Now several diagnostic tests are used for screening, clinical diagnosis and management of the disease. Hepatitis B surface antigen or HBsAg, previously described as Australia antigen, is the most important protein of the envelope of Hepatitis B Virus. The surface antigen contains the determinant “a”, common to all known viral subtypes and immunologically distinguished in two distinct subgroups (ay and ad). HBV has 10 major serotypes and four HBsAg subtypes have been recognized (adw, ady, ayw, and ayr). HBsAg can be detected 2 to 4 weeks before the ALT levels become abnormal and 3 to 5 weeks before symptoms develop. The serological detection of HBsAg is a powerful method for the diagnosis and prevention of HBV infection and ELISA has become an extensively used analytical system for screening of blood donors and clinical diagnosis of HBV in infected individuals.

TEST PRINCIPLE

For detection of HBsAg, Dialab HBsAg Sensitive ELISA uses antibody “sandwich” ELISA method, in which, polystyrene microwell strips are pre-coated with monoclonal antibodies specific to HBsAg. Patient’s serum or plasma sample is added to the microwells. During incubation, the specific immunocomplex formed in case of presence of HBsAg in the sample, is captured on the solid phase. Then the second antibody conjugated the enzyme horseradish peroxidase (the Enzyme Conjugate) directed against a different epitope of HBsAg is added into the wells. During the second incubation step, these HRP-conjugated antibodies will be bound to any anti-HBs-HBsAg complexes previously formed during the first incubation, and the unbound HRP-conjugate is then removed by washing. After washing to remove unbound HRP-conjugate, Chromogen solutions containing tetramethyl-benzidine (TMB) and urea peroxide are added to the wells. In presence of the antibody-antigen-antibody (HRP) “sandwich” immunocomplex, the colorless Chromogens are hydrolyzed by the bound HRP-conjugate to a blue-colored product. The blue color turns yellow after stopping the reaction with sulfuric acid. The amount of color intensity can be measured and it is proportional to the amount of antigen captured in the wells, and to its amount in the sample respectively. Wells containing samples negative for HBsAg remain colorless.

REAGENT COMPOSITION

Component	Description
Microwell plate	Blank microwell strips fixed on white strip holder. The plate is sealed in aluminum pouch with desiccant. 12x 8-well strips per plate. Each well contains monoclonal antibodies reactive to HBsAg (anti-HBs). The microwell strips can be broken to be used separately. Place unused

	wells or strips in the plastic sealable storage bag together with the desiccant and return to 2-8°C. **Once open, stable for 4 weeks at 2-8°C.**
Positive Control	Red-colored liquid filled in a vial with red screw cap. HBsAg diluted in protein-stabilized buffer. Ready to use as supplied. Contains 0.1% ProClin™ 300 as preservative. **Once open, stable for 4 weeks at 2-8°C.**
Negative Control	Yellowish liquid filled in a vial with green screw cap. Protein-stabilized buffer tested non-reactive for HBsAg. Ready to use as supplied. Contains 0.1% ProClin™ 300 as preservative. **Once open, stable for 4 weeks at 2-8°C.**
Enzyme Conjugate	Red-colored liquid filled in a vial with red screw cap. Horseradish peroxidase conjugated anti HBs antibodies. Ready to use as supplied. Contains 0.1% ProClin™ 300 as preservative. **Once open, stable for 4 weeks at 2-8°C.**
Specimen Diluent	Green-colored liquid in a vial with blue screw cap. Buffer Solution containing protein. Ready to use as supplied. Contains 0.1% ProClin™ 300 as preservative. **Once open, stable for 4 weeks at 2-8°C.**
Substrate Solution A	Colorless liquid filled in a white vial with green screw cap. Urea peroxide solution. Ready to use as supplied. **Once opened, stable for 4 weeks at 2-8°C.**
Substrate Solution B	Colorless liquid filled in a black vial with black screw cap. TMB (Tetramethyl benzidine), N,N-dimethylformamide. Ready to use as supplied. **Once opened, stable for 4 weeks at 2-8°C.**
Stop Solution	Colorless liquid in a white vial with yellow screw cap. Diluted sulfuric acid solution (0.5 M H_2SO_4). Ready to use as supplied. **Once opened, stable for 4 weeks at 2-8°C.**
Wash Buffer	Colorless liquid filled in a clear bottle with white screw cap, pH 7.4, 20x PBS. The concentrate must be diluted **1 to 20** with distilled/ deionized water before use. Contains Tween 20 as a detergent. **Once diluted, stable for one week at room temperature, or for two weeks when stored at 2-8°C.**

MATERIAL REQUIRED BUT NOT PROVIDED

- Freshly distilled or deionized water
- Disposable gloves and timer
- Appropriate waste containers for potentially contaminated materials
- Dispensing system and/or pipette
- Disposable pipette tips
- Absorbent tissue or clean towel
- Dry incubator or water bath 37 ± 1°C
- Plate reader, single wavelength 450 nm or dual wavelength 450/600-650 nm
- Microwell aspiration/wash system

REAGENT PREPARATION

Allow the reagents and samples to reach room temperature (18-30°C) for at least 15-30 minutes. Check the Wash Buffer concentrate for the presence of salt crystals. If crystals have formed, resolubilize by warming at 37°C until crystals dissolve. Dilute the Wash Buffer 1:20 as indicated in the instructions for washing. Use distilled or deionized water and only clean vessels to dilute the buffer. All other reagents are ready to use as supplied.

STORAGE AND STABILITY

The components of the kit will remain stable through the expiration date indicated on the label and package when stored between 2-8°C, do not freeze. To assure maximum performance of this HBsAg Sensitive ELISA kit, during storage protect the reagents from contamination with microorganisms or chemicals.

WARNINGS AND PRECAUTIONS

ProClin™ 300:

Warning:
H317: May cause an allergic skin reaction.
H412: Harmful to aquatic life with long lasting effects
P273: Avoid release to the environment
P280: Wear protective gloves/protective clothing/eye protection/face protection.
P333+313: If skin irritation or rash occurs: Get medical advice/attention.
P363: Wash contaminated clothing before reuse.

N,N dimethylformamide:

Danger:
H360D: May damage the unborn child.
P201: Obtain special instruction before use.
P280: Wear protective gloves/protective clothing/eye protection/face protection.
P308+P313: If exposed or concerned: Get medical advice/attention.

TO BE USED ONLY BY QUALIFIED PROFESSIONALS.

The ELISA assay is a time and temperature sensitive method. To avoid incorrect results, **strictly follow the test procedure steps and do not modify them.**

- Do not exchange reagents from different lots, or use reagents from other commercially available kits. The components of the kit are precisely matched as to achieve optimal performance of the test.
- Make sure that all reagents are within the validity indicated on the kit box and are of the same lot. Never use reagents beyond the expiry date stated on labels or boxes.
- **CAUTION – CRITICAL STEP:** Allow the reagents and samples to reach room temperature (18-30°C) before use. Shake reagent gently before use. Return to 2-8°C immediately after use.
- Use only sufficient volume of sample as indicated in the procedure steps. Failure to do so may cause in low sensitivity of the assay.
- Do not touch the bottom exterior of the wells; fingerprints or scratches may interfere with microwell reading. When reading the results, ensure that the plate bottom is dry and there are no air bubbles inside the wells.
- Never allow the microplate wells to dry after the washing step. Immediately proceed to the next step. Avoid the formation of air-bubbles when adding the reagents.
- Avoid assay steps long time interruptions. Assure same working conditions for all wells.
- Calibrate the pipette frequently to assure the accuracy of samples/reagents dispensing. Use different disposal pipette tips for each specimen and reagents as to avoid cross-contamination.
- Assure that the incubation temperature is 37°C inside the incubator.
- When adding samples, avoid touching the well's bottom with the pipette tip.
- When measuring with a plate reader, determine the absorbance at 450 nm or 450/600-650 nm.
- The enzymatic activity of the Enzyme Conjugate might be affected by dust, reactive chemicals, and substances like sodium hypochlorite, acids, alkalis etc. Do not perform the assay in the presence of such substances.
- If using fully automated equipment, during incubation, do not cover the plates with the plate cover. The tapping out of the remainders inside the plate after washing, can also be omitted.
- All specimens from human origin should be considered as potentially infectious. Strict adherence to GLP (Good Laboratory Practice) regulations can ensure the personal safety.
- **WARNING:** Materials from human origin have been used in the preparation of the Negative Control in the kit. These materials have been tested with test kits with accepted performance and found negative for antibodies to HIV 1&2, HCV, TP and HBsAg. However, there is no analytical method that can assure that infectious agents in the specimens or reagents are completely absent. Therefore, handle reagents and specimens with extreme caution as if capable of transmitting infectious diseases. Bovine derived sera have been used for stabilizing of the positive and negative controls. Bovine serum albumin (BSA) and fetal calf sera (FCS) are derived from animals from BSE/TSE-free geographical areas.
- Never eat, drink, smoke, or apply cosmetics in the assay laboratory. Never pipette solutions by mouth.
- Chemicals should be handled and disposed of only in accordance with the current GLP (Good Laboratory Practices) and the local or national regulations.
- The pipette tips, vials, strips and sample containers should be collected and autoclaved for 2 hours at 121°C or treated with 10% sodium hypochlorite for 30 minutes to decontaminate before any further steps for disposal. Solutions containing sodium hypochlorite should NEVER be autoclaved.
- Materials Safety Data Sheet (MSDS) available upon request.
- Some reagents may cause toxicity, irritation, burns or have carcinogenic effect as raw materials. Contact with the skin and the mucosa should be avoided but not limited to the following reagents: Stop Solution, the Substrate Solutions and the Wash buffer.
- The Stop Solution (0.5 M H_2SO_4) is an acid. Corrosive. Use it with appropriate care. Wipe up spills immediately or wash with water if come into contact with the skin or eyes.
- ProClin™300 0.1% used as a preservative can cause sensation of the skin. Wipe up spills immediately or wash with water if come into contact with the skin or eyes.

Indications of Instability or Deterioration of the Reagent:
Values of the Positive or Negative controls, which are out of the indicated quality control range, are indicators of possible deterioration of the reagents and/or operator or equipment errors. In such case, the results should be

considered as invalid and the samples must be retested. In case of constant erroneous results and proven deterioration or instability of the reagents, immediately substitute the reagents with new one or contact Dialab for further assistance.

SPECIMEN COLLECTION AND STORAGE

- **Sample Collection:** No special patient's preparation required. Collect the specimen in accordance with the normal laboratory practice. Either fresh serum or plasma specimens can be used with this assay. Blood collected by venipuncture should be allowed to clot naturally and completely – the serum/plasma must be separated from the clot as early as possible as to avoid haemolysis of the RBC. Care should be taken to ensure that the serum specimens are clear and not contaminated by microorganisms. Any visible particulate matters in the specimen should be removed by centrifugation at 3000 RPM (round per minutes) for 20 minutes at room temperature or by filtration.
- Plasma specimens collected into EDTA, sodium citrate or heparin may be tested, **but highly lipaemic, icteric, or haemolytic specimens should not be used** as they can give false results in the assay. **Do not heat inactivate specimens**. This can cause deterioration of the target analyte. Samples with visible microbial contamination should never be used.
- Dialab HBsAg Sensitive ELISA is intended ONLY for testing of individual serum or plasma samples. Do not use the assay for testing of cadaver samples, saliva, urine or other body fluids or pooled (mixed) blood.
- **Transportation and Storage**: Store specimens at 2-8°C. Specimens not required for assaying within 7 days should be stored frozen (-20°C or lower). Multiple freeze-thaw cycles should be avoided. For shipment, samples should be packaged and labelled in accordance with the existing local and international regulations for transportation of clinical samples and ethological agents.

TEST PROCEDURE

1. **Preparation**: Mark three wells as Negative control (e.g. B1, C1, D1), two wells as Positive control (e.g. E1, F1) and one Blank (e.g. A1, neither samples nor Enzyme Conjugate should be added into the Blank well). If the results will be determined by using dual wavelength plate reader, the requirement for use of Blank well could be omitted. Use only number of strips required for the test.
2. **Adding Diluent:** Add **20 µL** of Specimen Diluent into each well except the Blank.
3. **Adding Sample:** Add **100 µL** of Positive control, Negative control, and Specimen into their respective wells except the Blank. Note: Use a separate disposal pipette tip for each specimen, Negative Control, Positive Control to avoid cross-contamination. Mix by tapping the plate gently.
4. **Incubating:** Cover the plate with the plate cover and incubate for **60 minutes at 37°C.**
5. **Adding Enzyme Conjugate:** At the end of the incubation, remove and discard the plate cover. Add **50 µL** Enzyme Conjugate into each well except the Blank, and mix by tapping the plate gently.
6. **Incubating:** Cover the plate with the plate cover and incubate for **30 minutes at 37°C.**
7. **Washing:** At the end of the incubation, remove and discard the plate cover. Wash each well **5 times** with diluted Wash buffer. Each time allow the microwells to soak for **30-60 seconds**. After the final washing cycle, turn down the plate onto blotting paper or clean towel and tap it to remove any remainders.
8. **Coloring:** Add **50 µL** of Substrate Solution A and **50 µL** of Substrate Solution B into each well including the Blank. Incubate the plate at **37°C for 30 minutes avoiding light**. The enzymatic reaction between the Substrate solutions and the Enzyme Conjugate produces blue color in Positive control and HBsAg positive sample wells.
9. **Stopping Reaction:** Using a multichannel pipette or manually, add **50 µL** Stop Solution into each well and mix gently. Intensive yellow color develops in Positive control and anti-HBsAg positive sample wells.
10. **Measuring the Absorbance:** Calibrate the plate reader with the Blank well and read the absorbance at **450 nm**. If a dual filter instrument is used, set the reference wavelength at **600 - 650 nm**. Calculate the Cut-off value and evaluate the results. **Note:** read the absorbance within **10 minutes** after stopping the reaction.

Instructions for Washing:

- A good washing procedure is essential in order to obtain correct and precise analytical data.
- It is therefore, recommended to use a good quality ELISA microplate washer, maintained at the best level of washing performances. In general, no less than **5 automatic washing cycles** of **350-400 µl/well** are sufficient to avoid false positive reactions and high background.
- To avoid cross-contaminations of the plate with specimen or Enzyme Conjugate, after incubation do not discard the content of the wells but allow the plate washer to aspirate it automatically.
- Assure that the microplate washer liquid dispensing channels are not blocked or contaminated and sufficient volume of Wash buffer is dispensed each time into the wells.
- In case of manual washing, we suggest to carry out **5 washing cycles**, dispensing **350-400µl/well** and aspirating the liquid for **5 times.** If poor results (high background) are observed, increase the washing cycles or soaking time per well.

- In any case, the liquid aspirated out the strips should be treated with a sodium hypochlorite solution (final concentration of 2.5%) for 24 hours, before liquids are disposed in an appropriate way.
- The concentrated Wash buffer should be diluted **1:20** before use. If less than a whole plate is used, prepare the proportional volume of solution.

INTERPRETATION OF RESULTS

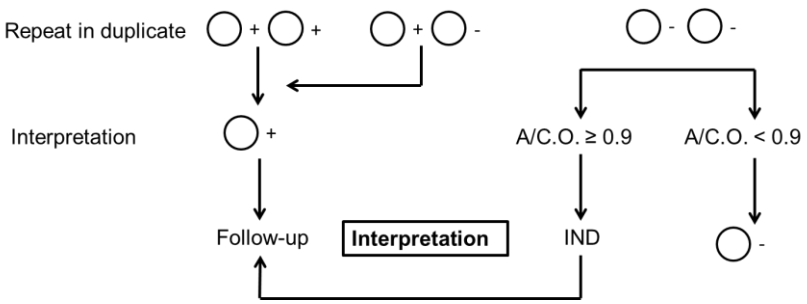
Negative Results (A / C.O. < 1): Specimens giving absorbance less than the Cut-off value are negative for this assay, which indicates that no Hepatitis B virus surface antigen has been detected with Dialab HBsAg Sensitive ELISA, therefore the patient is probably not infected with HBV and the blood unit does not contain hepatitis B virus surface antigen and could be transfused in case that other infectious diseases markers are also absent.

Positive Results (A / C.O. ≥ 1): Specimens giving an absorbance equal to or greater than the Cut-off value are considered initially reactive, which indicates that Hepatitis B virus surface antigen has probably been detected using Dialab HBsAg Sensitive ELISA. All initially reactive specimens should be retested in duplicates using Dialab HBsAg Sensitive ELISA before the final assay results interpretation. Repeatedly reactive specimens can be considered positive for Hepatitis B virus surface antigen with Dialab HBsAg Sensitive ELISA.

Borderline (A / C.O. = 0.9 - 1.1): Specimens with absorbance to Cut-off ratio between 0.9 and 1.1 are considered borderline and retesting of these specimens in duplicates is required to confirm the initial results.

Follow-up, confirmation and supplementary testing of any positive specimen with other analytical system (e.g. PCR) is required. Clinical diagnosis should not be established based on a single test result. It should integrate clinical and other laboratory data and findings.

INITIAL RESULTS INTERPRETATION AND FOLLOW-UP
ALL INITIALY REACTIVE OR BORDERLINE SAMPLES



IND = non interpretable

- If, after retesting of the initially reactive samples, both wells are negative (A/C.O.<0.9), these samples should be considered as non-repeatable positive (or false positive) and recorded as negative. As with many very sensitive ELISA assays, false positive results can occur due to the several reasons, most of which are connected with, but not limited to, inadequate washing step.
- If after retesting in duplicates, one or both wells are positive results, the final result from this ELISA test should be recorded as repeatedly reactive. Repeatedly reactive specimens could be considered positive for Hepatitis B virus surface antigen and therefore the patient is probably infected with HBV and the blood unit must be discarded.
- After retesting in duplicates, samples with values close to the Cut-off value should be interpreted with caution and considered as "borderline" zone samples or uninterpretable for the time of testing.

QUALITY CONTROL AND CALIBRATION

Each microplate should be considered separately when calculating and interpreting the results of the assay, regardless of the number of plates concurrently processed. The results are calculated by relating each specimen absorbance (A) value to the Cut-off value (C.O.) of the plate. If the Cut-off reading is based on single filter plate reader, the results should be calculated by subtracting the Blank well A value from the print report values of specimens and controls. In case the reading is based on dual filter plate reader, do not subtract the Blank well A value from the print report values of specimens and controls.

Calculation of the Cut-off value (C.O.) = Nc + 0.06
(**Nc** = the mean absorbance value for three negative controls).

Quality control (assay validation): The test results are valid if the Quality Control criteria are fulfilled. It is recommended that each laboratory must establish appropriate quality control system with quality control material similar to or identical with the patient sample being analyzed.

- The A value of the Blank well, which contains only Substrate Solutions and Stop solution, is <0.080 at 450 nm.
- The A values of the Positive control must be ≥0.800 at 450/600-650 nm or at 450 nm after blanking.
- The A values of the Negative control must be ≤0.100 at 450/600-650 nm or at 450 nm after blanking.

If one of the Negative Control A values does not meet the Quality Control criteria, it should be discarded and the mean value calculated again using the remaining two values. If more than one Negative Control A values do not meet the Quality Control Range specifications, the test is invalid and must be repeated.

Example:

1. Quality Control

Blank well A value: A1 = 0.025 at 450 nm (Note: blanking is required only when reading with single filter at 450 nm)

Well No.:	**B1**	**C1**	**D1**
Negative control A values after blanking:	0.020	0.012	0.016

Well No.:	**E1**	**F1**
Positive control A values after blanking:	2.421	2.369

All control values are within the stated quality control range

2. Calculation of Nc: = (0.020+0.012+0.016)/3 = 0.016

3. Calculation of the Cut-off: (C.O.) = 0.016 + 0.06 = 0.076

PERFORMANCE CHARACTERISTICS

Evaluation studies carried out in external quality control institutes as well as 3 blood banks, demonstrated the following performance characteristics of HBsAg Sensitive ELISA.

Specificity: When evaluated on European blood donors (n=5038), the overall diagnostic specificity of the kit was 99.78%.

During multi-center evaluation Dialab HBsAg Sensitive ELISA demonstrated specificity of 99.92%.

Laboratory	Number	Dialab HBsAg Sensitive ELISA		
		-	+	Specificity
Blood bank A	1958	1955	3	99.85%
Blood bank B	2518	2516	2	99.92%
Blood bank C	6344	6340	4	99.94%
Total	10820	10811	9	99.92%

Sensitivity: Dialab HBsAg Sensitive ELISA was evaluated for sensitivity on 22 HBV commercially available HBV seroconversion panels, and on total 403 HBsAg positive including 146 HBsAg HBV genotyped and HBsAg subtyped plasma samples. With respect to seroconversion sensitivity, the results for Dialab HBsAg Sensitive ELISA on the 22 HBV seroconversion panels showed a sensitivity level at least equivalent with the range of current CE marked HBsAg screening assays. 10 additional seroconversion panels were tested in-house. The seroconversion sensitivity was comparable to other CE-marked HBsAg screening tests. With respect to diagnostic sensitivity Dialab HBsAg Sensitive ELISA detected all positive samples as positive, including the HBV genotypes A-F for HBsAg subtypes examined.

In conclusion, the overall score of Dialab HBsAg Sensitive ELISA for the seroconversion sensitivity was comparable with other CE marked HBsAg test kits for which PEI holds data and all 403 HBsAg positive samples were reactive giving an overall sensitivity of 100%.

Analytical sensitivity: 0.067 IU/mL (NIBSC 00/588)

Analytical specificity: No interference was observed with samples from patients with high-level of rheumatoid factor, and pregnant woman. Same day and frozen specimens have been tested to check for interferences due to collection and storage. Total of 100 samples reactive for anti-HBc, anti-HCV and anti-HIV-1 were screened for HBsAg with Dialab HBsAg Sensitive ELISA. 98 out of 100 samples were negative for HBsAg. 200 blood samples from patients were also tested with Dialab HBsAg Sensitive ELISA. 191 out of 200 samples had negative screening results for HBsAg. 8 out of 9 samples with initial reactive screening results had repeat reactive test results with Dialab HBsAg Sensitive ELISA, but Hepatitis B virus was not confirmed in all cases.

Detection of mutations: Panel of 108 samples collected and sequenced by PCR were tested to demonstrate the performance of Dialab HBsAg Sensitive ELISA in detection of HBsAg mutations. The results are given in the table below.

Background		Number	Dialab HBsAg Sensitive ELISA
adr (+)	wild type	35	33
	4 mutations	5	4
adw (+)	wild type	37	34
	16 mutations	25	24
ayw (+)	wild type	2	2
	2 mutations	2	2
ayr (+)	2 mutations	2	2
Total		108	101

TRACEABILITY

22 seroconversion panels were used as reference material for the Dialab HBsAg Sensitive ELISA.

EXPECTED VALUES

Dialab HBsAg Sensitive ELISA is a qualitative assay and cannot be used to measure the antigen concentration, therefore the concept of expected values is not applicable. Example values for absorbance can be found in the chapter QUALITY CONTROL AND CALIBRATION:

LIMITATIONS

- Positive results must be confirmed with another available method and interpreted in conjunction with the patient clinical information.
- Antigens may be undetectable during the early stage of the disease. Therefore, negative results obtained with Dialab HBsAg Sensitive ELISA are only indication that the sample does not contain detectable level of Hepatitis B virus surface antigen and any negative result should not be considered as conclusive evidence that the individual is not infected with HBV or the blood unit is not infected with HBV.
- If, after retesting of the initially reactive samples, the assay results are negative, these samples should be considered as non-repeatable (false positive) and interpreted as negative. As with many very sensitive ELISA assays, false positive results can occur due to the several reasons, most of which are related but not limited to inadequate washing step.
- The most common assay mistakes are: using kits beyond the expiry date, bad washing procedures, contaminated reagents, incorrect assay procedure steps, insufficient aspiration during washing, failure to add specimens or reagents, improper operation with the laboratory equipment, timing errors, the use of highly haemolyzed specimens or specimens containing fibrin, incompletely clotted serum specimens.
- The prevalence of the marker will affect the assay's predictive values.
- This assay cannot be utilized to test pooled (mixed) plasma. Dialab HBsAg Sensitive ELISA has been evaluated only with individual serum or plasma specimens.
- Dialab HBsAg Sensitive ELISA is a qualitative assay and the results cannot be used to measure antigen concentration.

WASTE MANAGEMENT

Reagents must be disposed of in accordance with local regulations.

LITERATURE

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USED SYMBOLS

Symbol	Description
Cont.	Content

CE 2854 IVD

DIALAB Produktion und Vertrieb von chemisch-technischen Produkten und Laborinstrumenten Gesellschaft m.b.H.
IZ NOE-Sued, Hondastrasse, Objekt M55, 2351 Wr. Neudorf, Austria
Phone: +43 (0) 2236 660910-0, Fax: +43 (0) 2236 660910-30, e-mail: office@dialab.at

HCV Ab Sensitive

(en) English

REF

Content

Z13370

- 1 Microwell Plate: 96 wells (12x 8-well antigen coated strips, individual breakaway)
- 1x 1 mL Positive Control
- 1x 1 mL Negative Control
- 1x 12 mL HRP Conjugate
- 1x 6 mL Biotin Conjugate
- 1x 6 mL Substrate Solution A
- 1x 6 mL Substrate Solution B
- 1x 6 mL Stop Solution
- 1x 50 mL Wash Buffer
- 3 Cardboard Plate Covers
- 1 Plastic Bag
- 1 Package Insert
- 1 Certificate of Analysis

Σ **96**

Z13500

- 5 Microwell Plates: 96 wells (12x 8-well antigen coated strips, individual breakaway)
- 3x 1 mL Positive Control
- 3x 1 mL Negative Control
- 5x 12 mL HRP Conjugate
- 5x 6 mL Biotin Conjugate
- 1x 60 mL Substrate Solution A
- 1x 60 mL Substrate Solution B
- 1x 60 mL Stop Solution
- 2x 125 mL Wash Buffer
- 15 Cardboard Plate Covers
- 5 Plastic Bags
- 1 Package Insert
- 1 Certificate of Analysis

Σ **480**

For professional in vitro diagnostic use only.

INTENDED USE

HCV Ab Sensitive is an enzyme-linked immunosorbent assay (ELISA) for the qualitative detection of antibodies against Hepatitis C Virus (HCV) in human serum or plasma. It is intended for the screening of blood donors and for diagnosing of patients related to infection with Hepatitis C virus.

DIAGNOSTIC SIGNIFICANCE

Hepatitis C virus (HCV) is an envelope, single stranded positive sense RNA (9.5 kb) virus belonging to the family of *Flaviviridae*. Six major genotypes and series of subtypes of HCV have been identified. Isolated in 1989, HCV is now recognized as the major cause for transfusion associated non-A, non-B hepatitis. The disease is characterized with acute and chronic form although more than 50% of the infected individuals develop severe, life threatening chronic hepatitis with liver cirrhosis and hepatocellular carcinomas. Since the introduction in 1990 of anti-HCV screening of blood donations, the incidence of this infection in transfusion recipients has been significantly reduced.
The first generation of HCV ELISAs showed limited sensitivity and specificity and was produced using recombinant proteins complementary to the NS4 (c100-3) region of the HCV genome as antigens. Second generation tests, which included recombinant / synthetic antigens from the Core (c22) and nonstructural regions NS3 (c33c, c100-3) and NS4 (c100-3, c200) resulted in a remarked improvement in sensitivity and specificity. The third generation tests include antigens from the NS5 region of the viral genome in addition to NS3 (c200), NS4 (c200) and the Core (c22). Third generation tests have improved sensitivity and shorten the time between infection with HCV and the appearance of detectable antibodies (window period) to 60 days.
The HCV Ab Sensitive ELISA is based on double antigen “sandwich” principle ELISA. This novel for the testing of HCV antibodies method allows detection of very early antibodies including IgM, and IgA in addition to the IgG which is the main target for detection of the previous generation assays. In addition, the method minimizes the unspecific reaction showed by the other methods and thus its utilization increases the specificity in detection.

TEST PRINCIPLE

This kit is a two-step incubation enzyme immunoassay, which uses polystyrene microwell strips pre-coated with recombinant HCV antigens expressed in *E. coli* (recombinant Core and NS3/4/5). Patient’s serum or plasma

specimen is added together with biotin-conjugated HCV antigens. During the first incubation step, the specific HCV antibodies, if present, will be captured inside the wells as a double antigen “sandwich” complex comprising of the coated, and the biotin-conjugated HCV antigens. The microwells are then washed to remove unbound serum proteins. During the second incubation step, the captured HCV antibodies are detected by adding of HRP-Conjugate. The microwells are then washed to remove unbound conjugate, and Substrate Solutions are added to the wells. In wells positive for HCV antibodies, the colorless substrates are hydrolyzed by the bound HRP conjugate to a blue colored product. The blue color turns yellow after stopping the reaction with sulfuric acid. The amount of color intensity can be measured and is proportional to the amount of antibodies captured in the wells, and to the sample respectively. Wells containing samples negative for anti-HCV remain colorless.

REAGENT COMPOSITION

Component	Description
Microwell plate	12x 8 well strips with breakaway microwells sealed in an aluminum pouch with desiccant. Each well contains HCV recombinant specific antigens. The microwell strips can be broken to be used separately, place the unused wells or strips in the provided plastic sealable storage bag together with the desiccant and return to 2-8°C. Ready to use as supplied. Once opened, stable for 4 weeks (2-8°C)
Positive Control	Red-colored liquid filled in a vial with red screw cap. HCV antibodies diluted in protein-stabilized buffer. preservatives: 0.1% ProClin™ 300. Ready to use as supplied. Once opened, stable for 4 weeks (2-8°C)
Negative Control	Blue-colored liquid filled in a vial with green screw cap. protein-stabilized buffer tested non-reactive for HCV antibodies. preservatives: 0.1% ProClin™ 300. Ready to use as supplied. Once opened, stable for 4 weeks (2-8°C).
HRP Conjugate	Red-colored liquid filled in a white vial with red screw cap. Horseradish peroxidase-conjugated avidin. preservatives: 0.1% ProClin™ 300. Ready to use as supplied. Once opened, stable for 4 weeks (2-8°C).
Biotin Conjugate	Blue-colored liquid in a vial with blue screw cap. Biotinylated HCV antigens diluted in protein-stabilized buffer. preservatives: 0.1% ProClin™ 300. Ready to use as supplied. Once opened, stable for 4 weeks (2-8°C).
Substrate Solution A	Colorless liquid filled in a white vial with green screw cap. Urea peroxide solution. Ready to use as supplied. Once opened, stable for 4 weeks at 2-8°C.
Substrate Solution B	Colorless liquid filled in a black vial with black screw cap. TMB (Tetramethyl benzidine), N,N-dimethylformamide. Ready to use as supplied. Once opened, stable for 4 weeks at 2-8°C.
Stop Solution	Colorless liquid in a white vial with yellow screw cap. Diluted sulfuric acid solution (0.5 M H_2SO_4). Ready to use as supplied. Once opened, stable for 4 weeks at 2-8°C.
Wash Buffer	Colorless liquid filled in a clear bottle with white screw cap. Buffer solution containing surfactant. Contains Tween 20 as a detergent. Concentrate (20x). The concentrate must be diluted 1 to 20 with distilled/ deionized water before use. Once diluted, stable for 1 week at room temperature, or for 2 weeks when stored at 2-8°C.

MATERIAL REQUIRED BUT NOT PROVIDED

- Freshly distilled or deionized water
- Disposable gloves and timer
- Appropriate waste containers for potentially contaminated materials
- Dispensing system and/or pipette
- Disposable pipette tips
- Absorbent tissue or clean towel
- Dry incubator or water bath, 37 ± 1°C
- Microwell plate reader, single wavelength 450nm or dual wavelength 450nm/600-650nm
- Microwell aspiration/wash system

REAGENT PREPARATION

Allow the reagents and samples to reach room temperature **(18-30°C)** for at least 15-30 minutes. Check the Wash buffer concentrate for the presence of salt crystals. If crystals have formed in the solution, resolubilize by warming at 37°C until crystals dissolve. Dilute the stock wash Buffer **1:20** with distilled or deionized water. Use only clean vessels to dilute the Wash buffer. All other reagents are ready to use as supplied.

STORAGE AND STABILITY

The components of the kit will remain stable through the expiration date indicated on the label and package when stored between 2-8°C, do not freeze. To assure maximum performance of the Dialab HCV Ab Sensitive ELISA, protect the reagents from contamination with microorganisms or chemicals during storage.

WARNINGS AND PRECAUTIONS

ProClin™ 300:

Warning:
H317: May cause an allergic skin reaction.
H412: Harmful to aquatic life with long lasting effects
P273: Avoid release to the environment
P280: Wear protective gloves/protective clothing/eye protection/face protection.
P333+313: If skin irritation or rash occurs: Get medical advice/attention.
P363: Wash contaminated clothing before reuse.

N,N dimethylformamide:

Danger:
H360D: May damage the unborn child.
P201: Obtain special instruction before use.
P280: Wear protective gloves/protective clothing/eye protection/face protection.
P308+P313: If exposed or concerned: Get medical advice/attention.

TO BE USED ONLY BY QUALIFIED PROFESSIONALS

ELISA assays are a time and temperature sensitive method. To avoid incorrect results, **strictly follow the test procedure steps and do not modify them.**

- Do not exchange reagents from different lots, or use reagents from other commercially available kits. The components of the kit are precisely matched as to achieve optimal performance of the test.
- Make sure that all reagents are within the validity indicated on the kit box and are of the same lot. Never use reagents beyond the expiry date stated on labels or boxes.
- **CAUTION - CRITICAL STEP:** Allow the reagents and samples to reach room temperature (18-30°C) before use. Shake reagent gently before. Return to 2-8°C immediately after use.
- Use only sufficient volume of sample as indicated in the procedure steps. Failure to do so may cause in low sensitivity of the assay.
- Do not touch the bottom exterior of the wells; fingerprints or scratches may interfere with microwell reading. When reading the results, ensure that the plate bottom is dry and there are no air bubbles inside the wells.
- Never allow the microplate wells to dry after the washing step. Immediately proceed to the next step. Avoid the formation of air bubbles when adding the reagents.
- Avoid long time interruptions of assay steps. Assure same working conditions for all wells.
- Calibrate the pipette frequently to assure the accuracy of samples/reagents dispensing. Use different disposal pipette tips for each specimen and reagents in order to avoid cross-contaminations.
- Assure that the incubation temperature is 37°C inside the incubator.
- When adding samples, avoid touching the well's bottom with the pipette tip.
- When measuring with a plate reader, determine the absorbance at 450 nm or at 450/600-650 nm.
- The enzymatic activity of the HRP-conjugate might be affected from dust and reactive chemical and substances like sodium hypochlorite, acid, alkalis etc. Do not perform the assay in the presence of these substances.
- If using fully automated equipment, during incubation, do not cover the plates with the plate cover. The tapping out of the remainders inside the plate after washing, can also be omitted.
- All specimens from human origin should be considered as potentially infectious. Strict adherence to GLP (good laboratory practice) regulations can ensure the personal safety.
- **WARNING**: Materials from human origin may have been used in the preparation of the Negative Control of the kit. These materials have been tested with tests kits with accepted performance and found negative for antibodies to HIV 1&2, HCV, TP and HBsAg. However, there is no analytical method that can assure that infectious agents in the specimens or reagents are completely absent. Therefore, handle reagents and specimens with extreme caution as if capable of transmitting infectious diseases. Bovine derived sera have been used for stabilizing the positive and negative controls. Bovine serum albumin (BSA) and fetal calf sera (FCS) are derived from animals from BSE/TSE free geographical areas.
- Never eat, drink, smoke, or apply cosmetics in the assay laboratory. Never pipette solutions by mouth.
- Chemical should be handled and disposed of only in accordance with the current GLP (Good Laboratory Practices) and the local or national regulations.
- The pipette tips, vials, strips and specimen containers should be collected and autoclaved for not less than 2 hours at 121°C or treated with 10% sodium hypochlorite for 30 minutes to decontaminate before any further steps

for disposal. Solutions containing sodium hypochlorite should NEVER be autoclaved. Materials Safety Data Sheet (MSDS) available upon request.

- Some reagents may cause toxicity, irritation, burns or have carcinogenic effect as raw materials. Contact with the skin and the mucosa should be avoided but not limited to the following reagents: Stop solution, the Substrate Solutions, and the Wash buffer.
- The Stop solution (0.5 M H_2SO_4) is an acid. Use it with appropriate care. Wipe up spills immediately or wash with water if after contact with the skin or eyes.
- ProClin™ 300 0.1% used as a preservative can cause sensation of the skin. Wipe up spills immediately and wash with water after contact with the skin or eyes.

Indications of Instability or Deterioration of the Reagent:
Values of the Positive or Negative controls, which are out of the indicated quality control range, are indicators of possible deterioration of the reagents and/or operator or equipment errors. In such case, the results should be considered as invalid and the samples must be retested. In case of constant erroneous results and proven deterioration or instability of the reagents, immediately substitute the reagents with new one or contact Dialab for further assistance.

SPECIMEN COLLECTION AND STORAGE

- **Sample Collection**: No special patient's preparation required. Collect the specimen in accordance with normal laboratory practice. Either fresh serum or plasma specimens can be used with this assay. Blood collected by venipuncture should be allowed to clot naturally and completely – the serum/plasma must be separated from the clot as early as possible to avoid hemolysis of the red blood cells. Care should be taken to ensure that the serum specimens are clear and not contaminated by microorganisms. Any visible particulate matters in the specimen should be removed by centrifugation at 3000 rpm (rounds per minute) for 20 minutes at room temperature or by filtration.
- Plasma specimens collected into EDTA, sodium citrate or heparin may be tested, but **highly lipaemic, icteric or hemolytic specimens should not be used** as they can give false results in the assay. **Do not heat inactivate specimens.** This can cause deterioration of the target analyte. Samples with visible microbial contamination should never be used.
- HCV Ab Sensitive ELISA is intended ONLY for testing of individual serum or plasma samples. Do not use the assay for testing of cadaver samples, saliva, urine, or other body fluids, or pooled (mixed) blood.
- **Transportation and Storage**: Store samples at 2-8°C. Samples not required for assaying within 3 days should be stored frozen (-20°C or lower). Multiple freeze-thaw cycles should be avoided. For shipment, samples should be packaged and labeled in accordance with the existing local and international regulations for transport of clinical samples and ethological agents.

TEST PROCEDURE

1. **Preparation:** Mark three wells as Negative control (**e.g. B1, C1, D1**), two wells as Positive control (**e.g. E1, F1**) and one Blank (**e.g. A1**, neither samples nor HRP-Conjugate or Biotin-Conjugate should be added into the Blank well). If the results will be determined by using dual wavelength plate reader, the requirement for use of Blank well could be omitted. Use only number of strips required for the test.
2. **Adding Biotin-Conjugate**: **Add 50** µL of Biotin-Conjugate reagent into each well except the Blank.
3. **Adding Sample:** Add **50 µL** of Positive control, Negative control, and Specimen into their respective wells, mix gently. **Note: Use a separate disposal pipette tip for each specimen, Negative and Positive Control as to avoid cross-contamination. Mix by tapping the plate gently.**
4. **Incubating:** Cover the plate with the plate cover and incubate for **60 minutes at 37°C**.
5. **Washing:** At the end of incubation, remove and discard the plate cover. Wash each well **5 times** with diluted Wash buffer. Each time, allow the microwells to soak for **30-60 seconds**. After the final washing cycle, turn the strips plate onto blotting paper or clean towel, and tap it to remove any remainders.
6. **Adding HRP-Conjugate:** Add 100 µL HRP-Conjugate to each well except the Blank and mix by tapping the plate gently.
7. **HRP-Conjugate Incubating:** Cover the plate with the plate cover and incubate for **30 minutes at 37°C.**
8. **Washing**: At the end of the incubation, remove and discard the plate cover. Wash each well **5 times** with diluted Wash buffer as in **Step 5.**
9. **Coloring:** Add **50 µL** of Substrate solution A and **50 µL** of Substrate solution B into each well **including the Blank** and mix by tapping the plate gently. Incubate the plate at **37°C for 30 minutes avoiding light.** The enzymatic reaction between the Substrate solutions and the HRP-Conjugate produces a blue color in Positive control and HCV antibody positive sample wells.
10. **Stopping Reaction:** Using a multichannel pipette or manually add **50 µL** Stop Solution into each well and mix by tapping the plate gently. Intensive yellow color develops in Positive control and HCV antibody positive sample wells.

11. **Measuring the Absorbance:** Calibrate the plate reader with the Blank well and read the absorbance at **450 nm.** If a dual filter instrument is used, set the reference wavelength at **600-650 nm**. Calculate the Cut-off value and evaluate the results (**Note:** read the absorbance within **10 minutes** after stopping the reaction).

Instructions for Washing:

- A good washing procedure is essential in order to obtain correct and precise analytical data.
- It is therefore, recommended to use a good quality ELISA microplate washer, maintained at the best level of washing performances. In general, no less than **5 automatic washing cycles** of **350-400 µl/well** are sufficient to avoid false positive reactions and high background.
- To avoid cross-contaminations of the plate with specimen or HRP-conjugate, after incubation do not discard the content of the wells but allow the plate washer to aspirate it automatically.
- Assure that the microplate washer liquid dispensing channels are not blocked or contaminated and sufficient volume of Wash buffer is dispensed each time into the wells.
- In case of manual washing, we suggest to carry out **5 washing cycles**, dispensing **350-400µl/well** and aspirating the liquid for **5 times.** If poor results (high background) are observed, increase the washing cycles or soaking time per well.
- In any case, the liquid aspirated out the strips should be treated with a sodium hypochlorite solution (final concentration of 2.5%) for 24 hours, before liquids are disposed in an appropriate way.
- The concentrated Wash buffer should be diluted **1:20** before use. If less than a whole plate is used, prepare the proportional volume of solution.

INTERPRETATION OF RESULTS

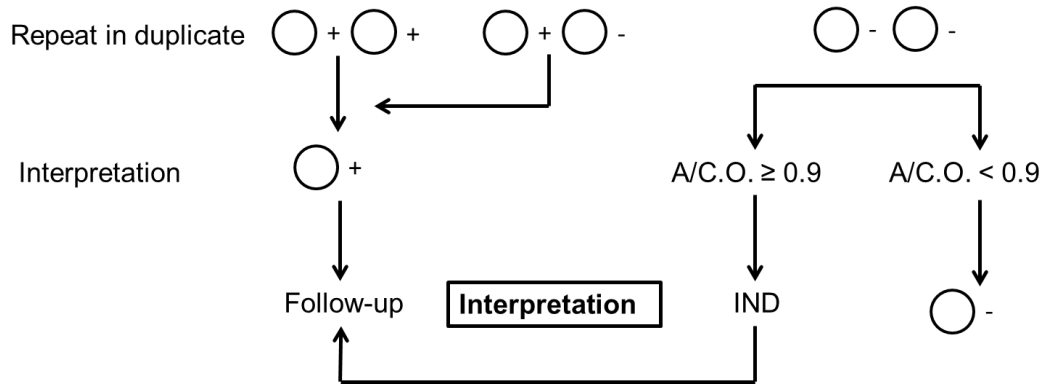
Negative Results (**A/C.O. < 1**)**:** samples giving absorbance less than the Cut-off value are negative for this assay, which indicates that no antibodies to hepatitis C virus have been detected with this HCV Ab Sensitive ELISA. Therefore, the patient is probably not infected with HCV and the blood unit does not contain HCV antibodies and could be transfused in case that other infectious diseases markers are also absent.

Positive Results (A/C.O. ≥ 1): samples giving an absorbance greater than or equal to the Cut-off value are considered initially reactive, which indicates that hepatitis C virus antibodies have probably been detected using this HCV Ab Sensitive ELISA kit. All initially reactive samples should be retested in duplicates using HCV Ab Sensitive ELISA before the final assay results in interpretation. Repeatedly reactive samples can be considered positive for hepatitis C antibodies tested with HCV Ab Sensitive ELISA.

Borderline (**A/C.O. = 0.9 – 1.1):** samples with absorbance to Cut-off ratio between 0.9 and 1.1 are considered borderline and retesting of these samples in duplicates is recommended to confirm initial results.

Follow-up and supplementary testing for any positive samples with other analytical system (e.g. RIBA, PCR) is required. Clinical diagnosis should not be established based on a single test result. It should integrate clinical and other laboratory data and findings.

INITIAL RESULTS INTERPRETATION AND FOLLOW-UP
ALL INITIALY REACTIVE OR BORDERLINE SAMPLES



IND = non interpretable

- If, after retesting of the initially reactive samples, both wells are negative results (A/C.O.<0.9), these samples should be considered as non-repeatable positive (or false positive) and recorded as negative. As with many very sensitive ELISA assays, false positive results can occur due to the several reasons, most of which are connected with, but not limited to, inadequate washing step.

- If after retesting in duplicates, one or both wells are positive results, the final result from this ELISA test should be recorded as repeatedly reactive. Repeatedly reactive specimens could be considered positive for hepatitis C virus antibodies and therefore the patient is probably infected with HCV and the blood unit must be discarded.
- After retesting in duplicates, samples with values close to the Cut-off value should be interpreted with caution and considered as "borderline" zone sample, or uninterpretable for the time of testing.

QUALITY CONTROL AND CALIBRATION

Each microplate must be considered separately when calculating and interpreting results of the assay, regardless of the number of plates concurrently processed. The results are calculated by relating each sample optical density (OD) value to the Cut-off value (C.O.) of the plate. If the Cut-off reading is based on single filter plate reader, the results must be calculated by subtracting the OD value from the Blank well when reporting values of samples and controls. In case the reading is based on dual filter plate reader, do not subtract the OD from the Blank well for reporting values of samples and controls.

Calculation of Cut-off value (C.O.) = Nc* + 0.12

***Nc** = the mean absorbance value for three negative controls.

Quality control (assay validation): The test results are valid if the Quality Control criteria are fulfilled. It is recommended that each laboratory must establish appropriate quality control system with quality control material similar to or identical with the patient sample being analyzed.

- The A value of the Blank well, which contains only Substrate Solutions and Stop Solution, is less than 0.080 at 450 nm.
- The A value of the Positive Control must be equal to or greater than 0.800 at 450/600-650 nm or at 450 nm after blanking.
- The A value of the Negative Control must be equal or less than 0.100 at 450/600-650 nm or at 450 nm after blanking.

If one of the A values of the Negative Control does not meet the Quality Control criteria, it should be discarded and the mean value calculated again using the remaining two values. If the OD of more than one Negative Control does not meet the Quality Control Range specifications, the test is invalid and must be repeated.

Example:

1. Quality Control

Blank well A value: A1 = 0.025 at 450 nm (Note: blanking is required only when reading with single filter at 450 nm)

Well No.:	**B1**	**C1**	**D1**
Negative control A values after blanking:	0.020	0.012	0.016

Well No.:	**E1**	**F1**
Positive control A values after blanking:	2.421	2.369

All control values are within the stated quality control range

2. Calculation of Nc: = (0.020+0.012+0.016)/3 = 0.016

3. Calculation of the Cut-off: (C.O.) = 0.016 + 0.12 = 0.136

PERFORMANCE CHARACTERISTICS

Evaluation studies carried out in external quality control institutes as well as six blood banks and hospitals, demonstrated the performance characteristics of HCV Ab Sensitive ELISA.

Diagnostic specificity:

When evaluated on European blood donors (n=5083), the overall diagnostic specificity of the kit was 99.96%. On blood donors outside Europe (n=15997), the overall diagnostic specificity of the kit was 99.97%.

Analytical specificity:

A total of 210 blood samples from hospitalized patients were evaluated. All samples selected were found negative on the reference test. Among these patients, six samples were initially reactive. One of them remained positive after repeat testing in duplicate. None of them showed anti-HCV antibodies with the confirmation test on immunoblot. 100 samples with potentially cross reacting substances were evaluated. None of them were reactive with the HCV Ab Sensitive ELISA.

No interference was observed with samples from patients with high-level of rheumatoid factor and pregnant women. Same day and frozen specimens have been tested to check for interferences due to collection and storage.

Sensitivity:
In total, 397 anti-HCV positive serum or plasma samples were tested, encompassing 200 genotype samples, representing the major HCV genotypes 1-6. With respect to diagnostic sensitivity on clinical specimens and HCV genotypes 1-6, HCV Ab Sensitive ELISA detected all positive samples as positive.
HCV Ab Sensitive ELISA was also evaluated for sensitivity on 33 HCV commercially available seroconversion panels. The seroconversion sensitivity of the assay was comparable to other CE-marked HCV antibody screening assays.

TRACEABILITY

33 seroconversion panels were used as reference material for the Dialab HCV Ab Sensitive ELISA.

EXPECTED VALUES

Dialab HCV Ab ELISA is a qualitative assay and cannot be used to measure the antibody concentration, therefore the concept of expected values is not applicable. Example values for absorbance can be found in the chapter QUALITY CONTROL AND CALIBRATION:

LIMITATIONS

- Positive results must be confirmed with another available method and interpreted in conjunction with the patient clinical information.
- Antibodies may be undetectable during the early stage of the disease. Therefore, negative results obtained with HCV Ab Sensitive ELISA are only indication that the sample does not contain detectable level of hepatitis C virus antibodies and any negative result should not be considered as conclusive evidence that the individual is not infected with HCV or the blood unit is not infected with HCV.
- If, after retesting of the initially reactive samples, the assay results are negative, these samples should be considered as non-repeatable (false positive) and interpreted as negative. As with many very sensitive ELISA assays, false positive results can occur due to the several reasons, most of which are related but not limited to inadequate washing step.
- The most common sources for mistakes are: using kits beyond the expiry date, bad washing procedures, contaminated reagents, incorrect assay procedure steps, insufficient aspiration during washing, failure to add samples or reagents, improper operation with the laboratory equipment, timing errors, the use of highly hemolyzed specimens or specimens containing fibrin, incompletely clotted serum specimens.
- The prevalence of the marker will affect the assay's predictive values.
- The assay cannot be utilized to test pooled (mixed) plasma. HCV Ab Sensitive ELISA has been evaluated only with individual serum or plasma samples.
- HCV Ab Sensitive ELISA is a qualitative assay and the results cannot be used to measure antibody concentration.

WASTE MANAGEMENT

Reagents must be disposed of in accordance with local regulations.

LITERATURE

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2. Alter HJ., Purcell RH, Holland PV, et al. (1978) Transmissible agent in non-A, non-B hepatitis. Lancet I: 459-463.
3. Choo Q-L,Weiner AJ, Overby LR, Kuo G, Houghton M. (1990) Hepatitis C Virus: the major causative agent of viral non-A, non-B hepatitis. Br Med Bull 46: 423-441.
4. Engvall E, Perlmann P. (1971) Enzyme linked immunosorbent assay (ELISA): qualitative assay of IgG. Immunochemistry 8:871-874.

USED SYMBOLS

Symbol	Description
Cont.	Content

CE 2854 IVD 2°C 8°C