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СЕРТИФИКАТ СООТВЕТСТВИЯ

Регистрационный номер № 04EAC1.CM.00813

Общество с ограниченной ответственностью «МиниМед»

(наименование лица)

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ИНН: 3234007127 **ОГРН: 1023202138332**

НАСТОЯЩИЙ СЕРТИФИКАТ УДОСТОВЕРЯЕТ СООТВЕТСТВИЕ

системы менеджмента качества изделий медицинских Общества с ограниченной ответственностью «МиниМед» требованиям ГОСТ ISO 13485-2017 (ISO 13485:2016) «Изделия медицинские. Системы менеджмента качества. Системные требования для целей регулирования» применительно к Производство лабораторной посуды, медицинских изделий, приборов и принадлежностей, красителей, реагентов и наборов реагентов для in-vitro диагностики

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Дата регистрации: 19-03-2019

Срок действия до: 18-03-2022

Руководитель органа по сертификации: _____ **В. И. Погодин**
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М.П.

НАСТОЯЩИЙ СЕРТИФИКАТ ОБЯЗЫВАЕТ ОРГАНИЗАЦИЮ ПОДДЕРЖИВАТЬ СОСТОЯНИЕ ВЫПОЛНЯЕМЫХ РАБОТ В СООТВЕТСТВИИ С ВЫШЕУКАЗАННЫМИ СТАНДАРТАМИ, ЧТО БУДЕТ НАХОДИТЬСЯ ПОД КОНТРОЛЕМ ОРГАНА ПО СЕРТИФИКАЦИИ СИСТЕМЫ ДОБРОВОЛЬНОЙ СЕРТИФИКАЦИИ "EAC AUDIT" И ПОДТВЕРЖДАТЬСЯ ПРИ ПРОХОЖДЕНИИ ЕЖЕГОДНОГО ИНСПЕКЦИОННОГО КОНТРОЛЯ

Declaration of Conformity

HL-7-0664DC DOI 2015/08 (1)

In Application of the Council Directive 98/79/EC on the approximation of the laws of the Member States relating to *In Vitro* Diagnostic Medical Devices & CE marking.

Declaration of conformance to applicable sections of Annex I - Essential Requirements and Annex III (EC Declaration of Conformity) imposed by sections 2 to 5. The below listed products are not classified under Annex II Lists A or B. Access to the appropriate technical files will be made available to the appropriate body in the event this is required.

Product Code	Description	GMDN Classification Code
5267L	Thromboplastin L	55983

I, the undersigned declare that the devices registered against the above GMDN Classification Code conforms to the said Directives.

Full Name: M.J. Stephenson Title: Managing Director

Signed: Date: 06 Aug 2015

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By Royal Charter

Certificate of Registration

QUALITY MANAGEMENT SYSTEM - ISO 13485:2016 & EN ISO 13485:2016

This is to certify that:

Helena Laboratories (UK) Ltd
trading as Helena Biosciences Europe
Queensway South
Team Valley Trading Estate
Gateshead
Tyne and Wear
NE11 0SD
United Kingdom

Holds Certificate Number: **MD 69326**

and operates a Quality Management System which complies with the requirements of ISO 13485:2016 & EN ISO 13485:2016 for the following scope:

The design, manufacture, supply, servicing and repair of in-vitro diagnostic devices, molecular biology products, immunochemistry products and medical laboratory equipment and consumables.

For and on behalf of BSI:

Gary E Slack, Senior Vice President - Medical Devices

Original Registration Date: 2002-10-25
Latest Revision Date: 2021-04-13

Effective Date: 2021-04-14
Expiry Date: 2024-04-13

...making excellence a habit.™

Certificate No: **MD 69326**

Location	Registered Activities
Helena Laboratories (UK) Ltd trading as Helena Biosciences Europe Sunderland Enterprise Park Colima Avenue Sunderland SR5 3XB United Kingdom	The design, manufacture, supply, servicing and repair of in-vitro diagnostic devices, molecular biology products, immunochemistry products and medical laboratory equipment and consumables.
Helena Laboratories (UK) Ltd trading as Helena Biosciences Europe Queensway South Team Valley Trading Estate Gateshead Tyne and Wear NE11 0SD United Kingdom	The design, manufacture, supply, servicing and repair of in-vitro diagnostic devices, molecular biology products, immunochemistry products and medical laboratory equipment and consumables.

Original Registration Date: 2002-10-25

Effective Date: 2021-04-14

Latest Revision Date: 2021-04-13

Expiry Date: 2024-04-13

APTT Si L Minus

helena Biosciences Europe

REF 5562
REF 5560
REF 5559

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HL-2-P-1787 Rev. 8

APTT Si L Minus
Instructions for use

en

INTENDED PURPOSE

The APTT Si L Minus kit is intended for carrying out clot based haemostasis assays.

For use in the determination of activated partial thromboplastin times (aPTT), and related coagulation procedures using phospholipid extract and a near-collodial particle activator. The test system can be used on manual, semi-automated and automated methods. From its origins through the work of Langdell and coworkers[1], and later modified by Proctor and Rapaport[2], the aPTT is used to detect disorders in the intrinsic coagulation system, which involves coagulation factors VIII, IX, XI, XII, prekallikrein, and high molecular weight kininogen. The aPTT is also used in assays which quantitate these factors and is routinely used for presurgical screening and monitoring of heparin therapy[3]. Commercially available reagents typically use one of three activators: kaolin, silica, or ellagic acid. In the basic screening test, the aPTT indirectly measures the formation of thrombin by its action on fibrinogen forming the fibrin clot. In the test, citrated test plasma is mixed with aPTT reagent for a specified period of time (typically 5 minutes) at +37°C followed by the addition of pre-warmed (+37°C) calcium chloride (0.025 M). Timing is begun from the time of addition of calcium chloride. The time required for clot formation is the aPTT. Clot detection can be by mechanical, manual (tilt tube), or photo-optical measurement.

WARNINGS AND PRECAUTIONS

The reagents contained in this kit are for *in vitro* diagnostic use only – DO NOT INGEST. Wear appropriate personal protective equipment when handling all kit components. Refer to the product safety declaration for the link to appropriate hazard and precautionary statements where applicable. Dispose of components in accordance with local regulations.

COMPOSITION

Component	Content	Description	Preparation
APTT Si L Minus	5 x 5 mL (REF 5562) 10 x 5 mL (REF 5560) 10 x 10 mL (REF 5559)	Reagent contains a near colloidal particle activator (magnesium-aluminium-silicate) for optimum sensitivity to factor deficiencies and to heparin. The reagent also contains phospholipids with buffer and stabilisers.	Bring to room temperature prior to use. Mix well by swirling or inversion prior to use.
Calcium Chloride: 0.025M	5 x 5 mL (REF 5562) 10 x 5 mL (REF 5560) 10 x 10 mL (REF 5559)	The reagent is a 0.025 M solution of calcium chloride.	The reagent is ready for use as packaged.
Each kit contains instructions for use.			

ITEMS REQUIRED BUT NOT PROVIDED

Any high quality electro-mechanical or photo-optical coagulation instrument designed for performing activated partial thromboplastin times may be used.

STORAGE, SHELF-LIFE AND STABILITY

Unopened reagents are stable until the given expiry date when stored under conditions indicated on the vial or kit label. Store at +2° –+8°C. DO NOT FREEZE. Stable for 30 days after opening. Avoid prolonged heating.

SAMPLE COLLECTION AND PREPARATION

Plastic or siliconised glass should be used throughout. Blood (9 parts) should be collected into 3.2% or 3.8% sodium citrate anticoagulant (1 part). Separate plasma after centrifugation at 1500 x g for 15 minutes. Plasma should be kept at +2° –+8°C or +18 –+24°C. Testing should be completed within 4 hours of sample collection, or plasma can be stored frozen at -20°C for 2 weeks or -70°C for 6 months. Thaw quickly at +37°C prior to testing. Do not keep at +37°C for more than 5 minutes. This will minimise the neutralisation of the lupus inhibitor[4]. Erroneous results may be caused by contamination with tissue fluids or stasis. Avoid agitation, air bubbles or foaming. For the effects of commonly administered drugs, refer to Young, *et al.*[5].

PROCEDURE

Manual Method

1. Prewarm well mixed APTT Si L Minus and 0.025 M Calcium Chloride to +37°C.
2. Prewarm 0.1 mL test plasma in duplicate to +37°C for 2 minutes.
3. Forcibly add 0.1 mL prewarmed APTT Si L Minus to plasma and start timer. Incubate for exactly 5 minutes at +37°C.
4. Add 0.1 mL prewarmed 0.025 M Calcium Chloride.
5. Note time for clot formation. Report result as aPTT time (seconds).

Automated Method

Refer to the appropriate instrument operator manual for detailed instructions or contact Helena Biosciences Europe for instrument specific application notes.

INTERPRETATION OF RESULTS

The results of the aPTT test should be reported to the nearest 1/10 of a second. The normal range (usually X ± 2 standard deviations) for each individual laboratory should be established. Results greater than the upper limits of the normal range should be considered abnormal and follow-up testing should be performed. Any aPTT values less than the lower limits of the normal range should be repeated on a new blood sample. Short aPTT values may be seen in association with *in vivo* thrombosis (e.g. deep vein thrombosis and disseminated intravascular coagulation).

Heparin monitoring

When monitoring heparin therapy, it is important to construct an *in vitro* reference curve which reflects the average heparin response, since individual patients respond differently to heparin. In general, one can consider the therapeutic range for heparin to be 0.2 to 0.5 units/mL[3,6].
The following precautions should be considered when monitoring heparin therapy:

1. Time of collection is important, since heparin has an *in vivo* half-life of only 1.5 hours[7].
2. Release of platelet factor 4 (heparin neutralising factor) caused by platelet aggregation or damage during collection, should be avoided. Careful blood collection, proper centrifugation and prompt removal of the platelet poor plasma from the cells will help minimise the release of platelet factor 4.
3. Baseline data on each patient's aPTT should be established before therapy, to determine the respective patient aPTT as it relates to the normal range established by the laboratory.
4. Different clot detection systems (mechanical, photo-optical, etc.) show variable sensitivities to heparin. The same test system should be used when monitoring heparinised patients.
5. Heparin response curves should be reestablished when lot numbers of reagent change and at periodic intervals with the same lot number.
6. The curve should also be constructed using the same heparin employed in therapy, to eliminate variables connected with heparins from different sources (e.g. porcine mucosa or bovine lung).

LIMITATIONS

Expected values for the aPTT test will vary from one laboratory to another, depending on the technique used. The method of clot detection, temperature, pH, collection technique, type of anticoagulant and time and method of specimen storage are all very important. Plasma sample collection and storage conditions should be standardised and carefully controlled. Unexpected results should be confirmed by additional tests. Platelet fragments present in a specimen may cause the release of phospholipids, and thus the neutralisation of any lupus inhibitor present in the specimen. The use of specimens with small plasma volumes should be avoided due to possible physiological pH changes. Testing could be affected by several drugs[5]. An increase in the aPTT results may be caused by the administration of diphenylhydantoin, heparin, warfarin and radiographic agents[5,8]. Decreased aPTT values may be seen during the use of oral contraceptives, or male estrogen therapy[9,10]. Thus, laboratories should establish their own expected values for patients and well defined performance standards for the control.

QUALITY CONTROL

Each laboratory should establish a quality control program. Normal and abnormal control plasmas should be tested prior to each batch of patient samples, to ensure satisfactory instrument and operator performance. If controls do not perform as expected, patient results should be considered invalid.
Helena Biosciences Europe supplies the following controls available for use with this product:

REF 5186	Routine Control N
REF 5187	Routine Control A
REF 5183	Routine Control SA
REF 5301	Speciality Assayed Control N
REF 5302	Speciality Assayed Control A

REFERENCE VALUES

Reference values can vary between laboratories depending on the techniques and systems in use. For this reason each laboratory should establish its own reference ranges.

PERFORMANCE CHARACTERISTICS

The following performance characteristics have been determined by Helena Biosciences Europe or their representatives using a photo-optical coagulation instrument. Each laboratory should establish its own performance data.

Reproducibility

		Intra-assay precision		Inter-assay precision		
Sample	*n*	*Clot formation (seconds)*	*CV (%)*	*n*	*Clot formation (seconds)*	*CV (%)*
Routine Control N	10	33.0	0.36	100	32.9	2.41
Routine Control SA	10	77.9	0.31	100	78.3	0.77

% Factor	Factor VIII (seconds)	Factor IX (seconds)	Factor XI (seconds)
<1	85.7	70.9	92.4
10	45.9	44.4	50.7
40	34.2	33.9	34.4
100	28.8	28.8	28.8

Heparin (IU/mL)	Clot formation (seconds)
0	29.9
0.2	70.0
0.4	174.0

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APTT Si L Minus
Fiche technique

fr

UTILISATION

Le kit APTT Si L Minus est destiné à la réalisation des analyses de l'hémostase basées sur la formation de caillots.

Utilisé dans la détermination du temps de céphaline activé (TCA), et pour des méthodes de coagulation connexes en utilisant des extraits de le phospholipide additionnés à particules semi-colloïdales comme activateur. Il est possible d'utiliser le système d'analyse avec des méthodes manuelles, semi-automatisées ou automatisées. Dès le début, avec les travaux de Langdell et de ses associés[1], plus tard modifiés par Proctor et Rapaport[2], le TCA est utilisé pour détecter des troubles de la voie intrinsèque de la coagulation, qui implique les facteurs de coagulation VIII, IX, XI, XII, la prékallicréine et le kininogène de haut poids moléculaire. Le TCA est aussi utilisé pour déterminer ces facteurs et est couramment utilisé dans les analyses préopératoires et dans la surveillance de l'héparinothérapie[3]. Les réactifs disponibles sur le marché utilisent en général l'un de ces trois activateurs: kaolin, silice ou acide ellagique. Dans le test de base, le TCA mesure de façon indirecte la formation de thrombine par son action sur le fibrinogène aboutissant à la formation d'un caillot fibrineux. Dans la détermination, le plasma citraté à analyser est mélangé avec le réactif TCA pendant une durée concrète (en général 5 minutes) à +37°C, puis du chlorure de calcium (0,025 M) préchauffé à +37°C est ajouté. Le chronométrage commence au moment de l'ajout du chlorure de calcium. Le temps nécessaire à la formation du caillot est le TCA. Il est possible de détecter la coagulation par une technique mécanique, manuelle (tube incliné) ou avec un instrument photo-optique.

AVERTISSEMENTS ET PRÉCAUTIONS

Les réactifs du kit sont à usage diagnostique *in vitro* uniquement – NE PAS INGÉRER. Porter un équipement de protection individuelle approprié lors de la manipulation de tous les composants du kit. Consulter la fiche de données de sécurité du produit pour obtenir le lien vers les phrases de risque et les conseils de prudence le cas échéant. Éliminer les composants conformément aux réglementations locales.

COMPOSITION

Composant	Contient	Description	Préparation
APTT Si L Minus	5 x 5 mL (REF 5562) 10 x 5 mL (REF 5560) 10 x 10 mL (REF 5559)	Contient un activateur à particules semi-colloïdales (magnésium-aluminiumsilicate) pour une sensibilité optimale aux déficits de facteurs et à l'héparine. Le réactif contient aussi le phospholipide avec le tampon et les agents de stabilisation.	Ramenez-le à température ambiante avant de l'utiliser. Mélangez bien en remuant ou en renversant avant d'utiliser.
Calcium Chloride: 0.025M	5 x 5 mL (REF 5562) 10 x 5 mL (REF 5560) 10 x 10 mL (REF 5559)	Le réactif est une solution de chlorure de calcium à 0,025 M.	Le réactif est prêt à l'emploi.
Chaque kit contient une fiche technique.			

MATÉRIEL NÉCESSAIRE NON FOURNI

Il est possible d'utiliser un instrument de coagulation électromécanique ou photo-optique de haute qualité conçu pour déterminer le temps de céphaline activé.

CONSERVATION, DURÉE DE VIE UTILE ET STABILITÉ

Les flacons de réactif non ouverts sont stables jusqu'à la date de péremption indiquée s'ils sont conservés dans les conditions indiquées sur l'étiquette du kit ou du flacon. Conservez-le à +2° –+8° C. SANS LE CONGELER. Stable pendant 30 jours après ouverture. Évitez des réchauffements prolongés.

PRÉLÈVEMENT ET PRÉPARATION DES ÉCHANTILLONS

Utiliser tout au long du prélèvement du plastique ou du verre siliconé. Mélanger 9 volumes de sang et 1 volume de citrate de sodium à 3,2% ou 3,8%. Séparer le plasma après centrifugation à 1500 x g pendant 15 minutes. Conserver le plasma entre +2° –+8°C ou +18 –+24°C. L'analyse doit être terminée dans les 4 heures suivant le prélèvement de l'échantillon; sinon, il est possible de congeler le plasma 2 semaines à -20°C ou 6 mois à -70°C. Décongeler rapidement à +37°C avant de réaliser l'analyse. Ne pas laisser à +37°C plus de 5 minutes car la neutralisation de la l'inhibiteur lupique serait réduite[4]. Il est possible d'obtenir des résultats erronés en cas de contamination avec du liquide tissulaire ou en cas de stase. Éviter d'agiter et de former des bulles d'air ou de l'écume. Se référer à Young, *et al.*[5] pour connaître les effets des médicaments couramment administrés.

PROCÉDURE

Méthode Manuelle

1. Préchauffez le mélange d'APTT Si L Minus et de chlorure de calcium à 0,025 M à +37°C.
2. Préchauffez 0,1 mL de plasma à analyser, en dosage double, à +37°C pendant 2 minutes.
3. Ajoutez énergiquement 0,1 mL d'APTT Si L Minus préchauffé au plasma et lancez le coagulomètre. Laissez incuber pendant 5 minutes exactement à +37°C.
4. Ajoutez 0,1 mL de chlorure de calcium à 0,025 M préchauffé.
5. Notez le temps de formation de caillots. Exprimez les résultats TCA en secondes.

Méthodes Automatisées

Consulter le manuel d'utilisation de l'instrument approprié pour obtenir des instructions détaillées ou contacter Helena Biosciences Europe pour obtenir des notes d'application spécifiques à l'instrument.

INTERPRÉTATION DES RÉSULTATS

Les résultats de TCA doivent être relevés en arrondissant au dixième de seconde. Il appartient à chaque laboratoire de déterminer ses valeurs usuelles (en général, temps moyen ± 2 écarts-types). Des résultats dépassant la limite supérieure des valeurs usuelles doivent être considérés comme anormaux et il est nécessaire de réaliser des études plus approfondies. Si les valeurs du TCA sont inférieures à la limite inférieure des valeurs usuelles, répéter l'analyse avec un nouvel échantillon de sang. Un TCA raccourci a été trouvé en association avec des thromboses *in vivo* (par exemple, thrombose veineuse profonde et coagulation intravasculaire disséminée).

Surveillance de l'heparine

Lors de la surveillance de l'héparinothérapie, il est important de créer une courbe de référence *in vitro* qui reflète la réponse moyenne à l'héparine, étant donné que chaque patient répond différemment à l'héparine. On considère en général que la plage thérapeutique de l'héparine se situe entre 0,2 et 0,5 unités/mL[3,6].
Les précautions suivantes doivent être prises en considération lors de la surveillance de l'héparinothérapie:

1. Le moment du prélèvement est important, étant donné la demi-vie *in vivo* de l'héparine n'est que de 1,5 heure[7].
2. Il convient d'éviter que du facteur plaquettaire 4 ne soit libéré (facteur neutralisant l'héparine) en raison de l'agrégation plaquettaire ou de la rupture de la structure lors du prélèvement. Un prélèvement de sang correct, une centrifugation appropriée et un enlèvement rapide de plasma pauvre en plaquettes des globules rouges aide à réduire la libération de facteur plaquettaire 4.
3. Les valeurs initiales du TCA de chaque patient doivent être établies avant la thérapie afin de déterminer le TCA patient respectif puisqu'il se rapporte aux valeurs usuelles établies par le laboratoire.
4. La sensibilité à l'héparine varie en fonction du système de détection de coagulation (mécanique, photo-optique, etc.). Il est nécessaire d'utiliser le même système d'analyse pour la surveillance des patients sous héparine.
5. Les courbes de réponse à l'héparine doivent être déterminées de nouveau lorsque le numéro de lot de réactif change et à des intervalles périodiques avec le même numéro de lot.
6. La courbe de réponse à l'héparine doit être déterminée en utilisant la même héparine tout au long de la thérapie afin d'éliminer les variations dues aux différentes sources d'héparine (par exemple, muqueuse porcine ou poumon bovin).

LIMITES

Les valeurs prévues du TCA varient d'un laboratoire à l'autre suivant la technique utilisée. La méthode de détection du caillot, la température, le pH, la technique de prélèvement, le type d'anticoagulant ainsi que la durée et le mode de conservation de l'échantillon sont des paramètres très importants. Les conditions de prélèvement et de conservation de l'échantillon de plasma doivent être normalisées et soigneusement contrôlées. Tout résultat hors intervalle doit être confirmé par des analyses supplémentaires. La présence de fragments de plaquettes dans un échantillon peut entraîner la libération de phospholipides et, par conséquent, la neutralisation de tout inhibiteur lupique présent dans l'échantillon. Il convient d'éviter d'utiliser des petits volumes de plasma en raison des potentielles variations physiologiques du pH. L'analyse peut être affectée par divers médicaments[5]. Un TCA allongé peut être du à l'administration de diphénylhydantoïne, d'héparine, de warfarine et de substances radiologiques[5,8]. Un TCA raccourci peut être observé en cas d'utilisation de contraceptifs oraux ou chez les sujets sous œstrogénothérapie[9,10]. Il appartient donc à chaque laboratoire d'établir ses propres valeurs attendues pour les patients et de déterminer ses normes de performances pour le contrôle.

CONTRÔLE QUALITÉ

Chaque laboratoire doit établir un programme de contrôle qualité. Les plasmas de contrôle, normaux et anormaux, doivent être testés avant chaque lot d'échantillons patients afin de s'assurer que l'instrument et l'opérateur offrent des performances satisfaisantes. Si les contrôles ne donnent pas les résultats prévus, les résultats du patient doivent être considérés comme non valables.
Helena Biosciences Europe distribue les contrôles suivants à utiliser avec ce produit:

REF 5186	Routine Control N
REF 5187	Routine Control A
REF 5183	Routine Control SA
REF 5301	Speciality Assayed Control N
REF 5302	Speciality Assayed Control A

VALEURS DE RÉFÉRENCE

Les valeurs de référence peuvent varier d'un laboratoire à l'autre suivant les techniques et les systèmes utilisés. C'est pour cette raison qu'il appartient à chaque laboratoire de déterminer ses propres plages de référence.

CARACTÉRISTIQUES DE PERFORMANCES

Helena Biosciences Europe ou ses mandataires ont déterminé les caractéristiques de performance suivantes en utilisant un instrument de coagulation photo-optique. Chaque laboratoire doit établir ses propres données de performance.

Reproductibilité

		Précision intra-série		Précision inter-séries		
Échantillon	*n*	*Formation du caillot (seconde)*	*CV (%)*	*n*	*Formation du caillot (seconde)*	*CV (%)*
Routine Control N	10	33,0	0,36	100	32,9	2,41
Routine Control SA	10	77,9	0,31	100	78,3	0,77

% Facteur	Facteur VIII (secondes)	Facteur IX (secondes)	Facteur XI (secondes)
<1	85,7	70,9	92,4
10	45,9	44,4	50,7
40	34,2	33,9	34,4
100	28,8	28,8	28,8

Héparine (UI/mL)	Formation du caillot (seconde)
0	29,9
0,2	70,0
0,4	174,0

BIBLIOGRAPHIE

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APTT Si L Minus
Anleitung

de

VERWENDUNGSZWECK

Das APTT Si L Minus-Kit ist für koagulometrische Gerinnungstests vorgesehen.

Zur Bestimmung der aktivierten partiellen Thromboplastinzeit (aPTT) und ähnlichen Gerinnungsverfahren mit Extrakt von Phospholipid und mit nahezu kolloiden Partikeln als Aktivator. Das Testsystem kann mit manuellen, halbautomatischen oder automatischen Methoden angewendet werden. Der APTT-Test wurde durch die Arbeit von Langdell und Mitarbeitern konzipiert[1] und später durch Proctor und Rapaport modifiziert[2], die aPTT wird zum Nachweis von Funktionsstörungen im intrinsischen Gerinnungssystem verwendet, zu welchem die Gerinnungsfaktoren VIII, IX, XI, XII, Präkallikrein und hochmolekulares Kininogen gehören. Die aPTT wird auch bei Tests verwendet, die diese Faktoren quantifizieren, und routinemäßig bei der OP-Vorbereitung und dem Monitoring der Heparintherapie verwendet[3]. Kommerziell erhältliche Reagenzien enthalten üblicherweise einen von drei Aktivatoren: Kaolin, Siliziumdioxid oder Ellagsäure. Bei einem Standard-Screening-Test misst die aPTT indirekt durch ihr Einwirken auf Fibrinogen die Thrombinbildung und damit der Bildung eines Fibringerinnsels. Das zu testende Citratplasma wird im Testansatz mit aPTT-Reagenz bei +37°C über einen bestimmten Zeitraum (üblicherweise 5 Minuten) gemischt und danach vorgewärmtes (+37°C) Calciumchlorid (0,025 M) zugegeben. Mit Zugabe des Calciumchlorids wird die Zeit gestoppt. Die Zeit, die es zur Gerinnselbildung braucht, wird als aPTT bezeichnet. Nachweis der Gerinnselbildung kann mechanisch, manuell (Kippmethode) oder lichtoptisch erfolgen.

WARNHINWEISE UND VORSICHTSMASSNAHMEN

Die in diesem Kit enthaltenen Reagenzien sind ausschließlich für die Verwendung von *in-vitro*-Diagnosen vorgesehen. NICHT VERSCHLUCKEN. Tragen Sie beim Umgang mit sämtlichen Komponenten des Kits geeignete Schutzausrüstung. Beachten Sie gegebenenfalls die Verweise auf entsprechende Gefahren- und Vorbeugeerklärungen in der Produktsicherheitserklärung. Entsorgen Sie die Komponenten gemäß den örtlichen Vorschriften.

ZUSAMMENSETZUNG

Komponente	Inhalt	Beschreibung	Vorbereitung
APTT Si L Minus	5 x 5 mL (REF 5562) 10 x 5 mL (REF 5560) 10 x 10 mL (REF 5559)	Das Reagenz enthält einen Aktivator aus nahezu kolloiden Partikeln (MagnesiumAluminium-Silikat), mit dem eine optimale Sensitivität gegenüber Faktor-Mangelzuständen und Heparin erreicht wird. Außerdem enthält das Reagenz Phospholipid mit Puffer und Stabilisatoren.	Bringen Sie es vor der Verwendung auf Raumtemperatur. Vor dem Gebrauch gut mischen durch Verwirbeln oder Umdrehen.
Calcium Chloride: 0.025M	5 x 5 mL (REF 5562) 10 x 5 mL (REF 5560) 10 x 10 mL (REF 5559)	Das Reagenz besteht aus einer 0,025 M Calciumchlorid-Lösung.	Das Reagenz ist gebrauchsfertig verpackt.
Jedes Kit enthält eine Gebrauchsanweisung.			

ERFORDERLICHE, ABER NICHT MITGELIEFERTE ARTIKEL

Es kann jedes zur Durchführung der aktivierten partiellen Thromboplastinzeit geeignete, qualitative hochwertige elektromechanische oder lichtoptische Gerät benutzt werden.

LAGERUNG, HALTBARKEIT UND STABILITÄT

Ungeöffnete Reagenzien sind unter den auf Verpackung oder Fläschchen angegebenen Lagerbedingungen bis zum aufgedruckten Verfallsdatum stabil. Bei +2° –+8°C lagern. NICHT EINFRIEREN. Das Produkt ist nach dem Öffnen 30 Tage lang stabil. Vermeiden Sie lang andauerndes Erhitzen.

PROBENENTNAHME UND VORBEREITUNG

Nur Plastik oder Silikonglas verwenden. Blut (9 Teile) sollte in 3,2% oder 3,8% Natriumcitrat als Antikoagulanz (1 Teil) entnommen werden. 15 Minuten bei 1500 g zentrifugieren und Plasma abpipettieren. Plasma bei +2° –+8°C oder +18 –+24°C lagern. Plasma sollte innerhalb von 4 Stunden verarbeitet oder tief gefroren bei -20°C für 2 Wochen oder -70°C für 6 Monat gelagert werden. Vor dem Testen schnell bei +37°C auftauen. Nicht länger als 5 Minuten bei +37°C belassen[4]; das minimiert die Neutralisation des Lupus-Inhibitors. Fehlerhafte Resultate können durch Kontamination mit Gewebeflüssigkeit oder Stase verursacht werden. Schütteln, Luftblasen oder Schaumbildung vermeiden. Für die Auswirkungen häufig verabreichter Medikamente siehe Young *et al.*[5].

VORGEHENSWEISE

Manuelle Methode

1. Wärmen Sie gut gemischtes APTT Si L Minus und 0,025 M Kalziumchlorid auf +37°C vor.
2. Wärmen Sie zwei Proben des Testplasmas von 0,1 mL 2 Minuten lang auf +37°C vor.
3. Geben Sie 0,1 mL vorgewärmtes APTT Si L Minus zu dem Plasma hinzu, und starten Sie den Timer. Inkubieren Sie genau 5 Minuten lang bei +37°C.
4. Fügen Sie 0,1 mL von den vorgewärmten 0,025 M Kalziumchlorid hinzu.
5. Notieren Sie die Zeit der Gerinnselbildung. Zeichnen Sie das Ergebnis als die aPTT-Zeit in Sekunden auf.

Automatisierte Methoden

Siehe die Bedienungsanleitung des entsprechenden Geräts für genaue Anweisungen oder wenden Sie sich an Helena Biosciences Europe für spezielle anwendungstechnische Hinweise.

INTERPRETATION DER ERGEBNISSE

Die Ergebnisse des aPTT-Tests bis auf ein Zehntel genau in Sekunden angeben. Jedes einzelne Labor sollte seinen Normalbereich (für gewöhnlich X ± 2 s) selbst ermitteln. Ergebnisse über der Grenze des oberen Normalbereichs sollten als abnormal angesehen und der Test wiederholt werden. aPTT-Werte unter dem unteren Normalbereich sollte mit einer frischen Blutprobe wiederholt werden. Verkürzte aPTT-Werte können *in vivo* mit einer Thrombose verbunden beobachtet werden (d. h. tiefe Venenthrombose und Verbrauchskoagulopathie).

Heparin-Monitoring

Bei der Überwachung von Heparin-Therapien ist es wichtig, eine *in vitro* Referenzkurve zu erstellen, welche, da die einzelnen Patienten unterschiedlich auf Heparin reagieren, die durchschnittliche Reaktion auf Heparin widerspiegelt. Im Allgemeinen gilt für Heparin der therapeutische Bereich von 0,2 bis 0,5 Einheiten/mL[3,6].
Folgende Vorsichtsmaßnahmen sollten bei der Überwachung der Heparin-Therapie berücksichtigt werden:

1. Der Zeitpunkt der Entnahme ist wichtig, da Heparin *in vivo* eine Halbwertszeit von nur 1,5 Stunden hat[7].
2. Freisetzung des Plättchenfaktors 4 (Heparin neutralisierender Faktor) durch Thrombozyten-Aggregation oder Schädigung bei der Entnahme sollten vermieden werden. Sorgfältige Blutentnahme, richtiges Zentrifugieren und sofortiges Trennen des plättchenarmen Plasmas von den Zellen trägt dazu bei, die Freisetzung des Plättchenfaktors 4 zu minimieren.
3. Vor der Therapie sollte von jedem Patienten aPTT-Ausgangswerte erstellt werden, um von dem entsprechenden Patienten das aPTT hinsichtlich des von Labor erstellten Normalbereichs zu bestimmen.
4. Die verschiedenen Systeme der Gerinnselerkennung (mechanisch, lichtoptisch usw.) reagieren mit unterschiedlicher Sensibilität auf Heparin. Zur Überwachung heparinisierter Patienten immer dasselbe Testsystem verwenden.
5. Heparin-Reaktionskurven neu erstellen, wenn die Chargen-Nummer des Reagenz sich ändert, und in regelmäßigen Abständen auch innerhalb der gleichen Charge.
6. Die Kurve sollte mit dem Heparin erstellt werden, das auch in der Therapie verwendet wird, um die mit Heparinen aus unterschiedlicher Quelle (z. B. Mucosa vom Schwein oder Lunge vom Rind) verbundenen Variablen auszuschließen.

EINSCHRÄNKUNGEN

Normalwerte für den aPTT-Test variieren je nach angewendeter Technik von Labor zu Labor. Sehr wichtig dafür sind: Methode der Gerinnselerkennung, Temperatur, pH, Entnahmeverfahren, das verwendete Antikoagulanz und Dauer und Art der Probenlagerung. Die Entnahme und Lagerungsbedingungen der Plasmaproben sollten standardisiert sein und sorgfältig überprüft werden. Unerwartete Ergebnisse müssen durch weitere Untersuchungen bestätigt werden. In einer Probe vorhandene Thrombozytenfragmente können die Freisetzung von Phospholipiden verursachen und so eventuell in der Probe vorhandene Lupus-Inhibitoren neutralisieren. Proben mit geringem Plasmavolumen sollten wegen möglicher physiologischer pH-Veränderungen nicht verwendet werden. Die Untersuchung kann durch verschiedene Medikamente beeinträchtigt werden[5]. Eine Verlängerung der aPTT-Ergebnisse kann durch die Gabe von Diphenylhydantoin, Heparin, Warfarin und Röntgenmittel gegeben sein[5,8]. Verminderte aPTT-Werte können bei Einnahme oraler Empfängnisverhütungsmittel oder Östrogentherapie beim Mann beobachtet werden[9,10]. Daher sollten Labors für Patienten ihren eigenen Referenzbereich und klar definierte Leistungsstandards für die Kontrolle erstellen.

QUALITÄTSKONTROLLE

Jedes Labor muss für eine eigene Qualitätskontrolle sorgen.
Vor jeder Testreihe mit Patientenproben müssen normale und pathologische Kontrollplasmen getestet werden, um eine zufrieden stellende Geräteleistung und Bedienung zu gewährleisten. Liegen die Kontrollen außerhalb des Normbereichs, sind die Patientenergebnisse nicht zu verwenden.
In Verbindung mit diesem Produkt bietet Helena Biosciences Europe die folgenden Kontrollen an:

REF 5186	Routine Control N
REF 5187	Routine Control A
REF 5183	Routine Control SA
REF 5301	Speciality Assayed Control N
REF 5302	Speciality Assayed Control A

REFERENZWERTE

Referenzwerte können je nach Technik und verwendetem System von Labor zu Labor unterschiedlich sein. Aus diesem Grund sollte jedes Labor seine eigenen Referenzwertbereiche erstellen.

LEISTUNGSMERKMALE

Die folgenden Leistungseigenschaften wurden von Helena Biosciences Europe oder in ihrem Auftrag mit einem fotooptischen Gerinnungsgerät ermittelt. Jede Labor muss seine eigenen Werte ermitteln.

Reproduzierbarkeit

		Intra-assay-Präzision		Inter-assay-Präzision		
Probe	*n*	*Gerinnselbildung (sekunden)*	*CV (%)*	*n*	*Gerinnselbildung (sekunden)*	*CV (%)*
Routine Control N	10	33,0	0,36	100	32,9	2,41
Routine Control SA	10	77,9	0,31	100	78,3	0,77

% Faktor	Faktor VIII (sekunden)	Faktor IX (sekunden)	Faktor XI (sekunden)
<1	85,7	70,9	92,4
10	45,9	44,4	50,7
40	34,2	33,9	34,4
100	28,8	28,8	28,8

Heparin (IU/mL)	Gerinnselbildung (sekunden)
0	29,9
0,2	70,0
0,4	174,0

LITERATURVERZEICHNIS

1. Langdell R, Wagner R, Brinkhous K (1953) Effect of Antihemophilic Factor on One Stage Clotting Tests, *J. Lab. Clin. Med*, **41:** 637
2. Proctor R, Rapaport S (1961) The Partial Thrombopastin Time with Kaolin, *Am. J. Clin. Path,* **36:** 212
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APTT Si L Minus
Istruzioni per l'uso

it

SCOPO PREVISTO

Il kit APTT Si L Minus è concepito per l'esecuzione di dosaggi di emostasi basati sulla presenza di coaguli.

Da utilizzare nella determinazione dei tempi di tromboplastina parziale attivata (aPTT), e nelle procedure di coagulazione correlate, con l'impiego di estratto di fosfolipide e particelle paracolloidale come attivatore. Il sistema di test può essere utilizzato con metodi manuali, semiautomatici e automatici. Sin dalle origini, grazie all'opera di Langdell e dei suoi collaboratori[1], modificati successivamente da Proctor e Rapaport[2], il aPTT viene utilizzato per rilevare i disordini del sistema intrinseco della coagulazione, in cui intervengono i fattori della coagulazione VIII, IX, XI e XII, la precallicreina e il chininogeno ad alto peso molecolare. L'aPTT viene utilizzato anche nei dosaggi che quantificano questi fattori e viene abitualmente utilizzato per lo screening prechirurgico e il monitoraggio della terapia eparinica[3]. I reagenti disponibili in commercio impiegano solitamente uno dei 3 attivatori seguenti: caolino, silice o acido ellagico. Nel test di screening di base, il aPTT misura indirettamente la formazione di trombina grazie alla sua azione sul fibrinogeno che forma il coagulo di fibrina. Nel test, il plasma citrato di prova viene miscelato con il reagente per aPTT per un intervallo di tempo specifico (solitamente di 5 minuti) a +37°C, seguito dall'aggiunta di calcio cloruro (0,025 M) preriscaldato (+37°C). La misurazione del tempo ha inizio al momento dell'aggiunta del calcio cloruro. Il tempo necessario per la formazione del coagulo corrisponde al aPTT. Il rilevamento del coagulo può avvenire per misurazione meccanica, manuale (inclinazione della provetta) o foto-ottica.

AVVERTENZE E PRECAUZIONI

I reagenti contenuti in questo kit sono destinati esclusivamente alla diagnostica *in vitro* - NON INGERIRE. Indossare un'adeguata attrezzatura protettiva personale durante la manipolazione di tutti i componenti del kit. Per conoscere le relative indicazioni precauzionali e di pericolo, laddove pertinente, fare riferimento alla dichiarazione di sicurezza del prodotto. Smaltire i componenti conformemente alle normative locali vigenti.

COMPOSIZIONE

Componente	Contiene	Descrizione	Preparazione
APTT Si L Minus	5 x 5 mL (REF 5562) 10 x 5 mL (REF 5560) 10 x 10 mL (REF 5559)	Il reagente contiene un attivatore di particelle paracolloidale (silicato di magnesio ed alluminio) per una maggior sensibilità nei confronti di deficit di fattori e dell'eparina. Il reagente contiene inoltre un fosfolipide con tampone e stabilizzatori.	Prima dell'uso portare a temperatura ambiente. Miscelare accuratamente con il vortex o capovolgere più volte prima di utilizzare il reagente.
Calcium Chloride: 0.025M	5 x 5 mL (REF 5562) 10 x 5 mL (REF 5560) 10 x 10 mL (REF 5559)	Il reagente è costituito da una soluzione 0,025 M di calcio cloruro.	Il reagente è in confezione pronta all'uso.

Ogni kit contiene un Istruzioni per l'uso.

MATERIALI NECESSARI, MA NON IN DOTAZIONE

È possibile utilizzare qualsiasi strumento di coagulazione elettromeccanico o foto-ottico di alta qualità idoneo alla determinazione dei tempi di tromboplastina parziale attivata.

CONSERVAZIONE, VITA UTILE E STABILITÀ

I reagenti non aperti sono stabili fino alla data di scadenza indicata se conservati nelle condizioni riportate sul flacone o sull'etichetta del kit. Conservare a una temperatura compresa tra +2° –+8°C. NON CONGELARE. Il reagente rimane stabile per 30 giorni dopo l'apertura. Evitare il riscaldamento prolungato.

RACCOLTA E PREPARAZIONE DEI CAMPIONI

Nel corso dell'intera procedura è necessario utilizzare plastica o vetro siliconizzato. Il sangue (9 parti) deve essere raccolto in sodio citrato al 3,2% o al 3,8% come anticoagulante (1 parte). Separare il plasma in seguito a centrifugazione a 1500 x g per 15 minuti. Il plasma deve essere conservato a +2° –+8°C o +18 –+24°C. I test devono essere completati entro 4 ore dalla raccolta dei campioni; in alternativa, il plasma può essere conservato congelato a -20°C per 2 settimane o a -70°C per 6 mese. Decongelare rapidamente a +37°C prima di eseguire i test. Non conservare a +37°C per oltre 5 minuti[4]. Ciò ridurrà al minimo la neutralizzazione del lupus inibitore. La contaminazione con liquidi tissutali o la stasi possono dare luogo a risultati erronei. Evitare l'agitazione, le bolle d'aria o la formazione di schiuma. Per gli effetti dei farmaci comunemente somministrati fare riferimento a Young *et al.*[5].

PROCEDURA

Metodo Manuale

1. Miscelare accuratamente APTT Si L Minus e il calcio cloruro a 0,025 M quindi preriscaldare a +37°C.
2. Preriscaldare 0,1 mL di plasma di test, in doppio, a +37°C per due minuti.
3. Aggiungere forzatamente 0,1 mL di reagente APTT Si L Minus preriscaldato al plasma e avviare il cronometro. Incubare per esattamente 5 minuti a +37°C.
4. Aggiungere 0,1 mL di calcio cloruro preriscaldato a 0,025 M.
5. Prendere nota del tempo necessario per la formazione di coaguli. Riportare il risultato come tempo aPTT in secondi.

Metodo Automatico

Fare riferimento al manuale utente dello strumento appropriato per istruzioni dettagliate oppure contattare Helena Biosciences Europe per le note applicative specifiche dello strumento.

INTERPRETAZIONE DEI RISULTATI

I risultati del test aPTT devono essere registrati con un'approssimazione di 1/10 di secondo. Per ogni singolo laboratorio dovrebbe essere stabilito il range normale (di solito X ± 2 deviazioni standard). I risultati maggiori dei limiti superiori del range normale devono essere considerati anomali e devono pertanto essere eseguiti test di follow-up. I valori di aPTT minori dei limiti inferiori del range normale devono essere ripetuti su un nuovo campione di sangue. Valori di aPTT breve possono essere osservati in concomitanza con una trombosi *in vivo* (ossia trombosi delle vene profonde e coagulazione intravascolare disseminata).

Monitoraggio dell'eparina

In caso di monitoraggio della terapia eparinica, è importante costruire una curva di riferimento *in vitro* che rifletta la risposta media all'eparina, in quanto i singoli pazienti rispondono all'eparina in modo diverso. In generale, il range terapeutico per l'eparina può essere considerato compreso tra 0,2 e 0,5 unità/mL[3,6].
Durante il monitoraggio della terapia eparinica, è necessario adottare le misure precauzionali illustrate di seguito:

1. Il tempo di raccolta è importante, in quanto l'eparina possiede un'emivita *in vivo* di appena 1,5 ore[7].
2. È necessario evitare il rilascio del fattore piastrinico 4 (fattore di neutralizzazione dell'eparina) causato dall'aggregazione delle piastrine o eventuali danni durante la raccolta. Un'attenta raccolta del sangue, una centrifugazione adeguata e una tempestiva rimozione del plasma povero di piastrine dalle cellule contribuiscono a ridurre al minimo il rilascio del fattore piastrinico 4.
3. I dati di base sull'aPTT di ciascun paziente devono essere definiti prima della terapia, per determinare il rispettivo aPTT correlato al range normale stabilito dal laboratorio.
4. I diversi sistemi di rilevamento del coagulo (meccanica, foto-ottici, ecc.) mostrano sensibilità variabili all'eparina. Durante il monitoraggio dei pazienti eparinizzati è necessario utilizzare lo stesso sistema di test.
5. Le curve di risposta all'eparina devono essere determinate nuovamente con il cambiamento dei numeri di lotto del reagente e ad intervalli periodici con lo stesso numero di lotto.
6. La curva deve essere costruita utilizzando anche la stessa eparina impiegata in terapia, per eliminare le variabili collegate alle eparine provenienti da fonti diverse (ad es. mucosa suina o polmone bovino).

LIMITAZIONI

I valori previsti per il test dell'aPTT variano da un laboratorio all'altro in funzione della tecnica utilizzata. Il metodo di rilevamento del coagulo, la temperatura, il pH, la tecnica di raccolta, il tipo di anticoagulante, nonché il tempo e il metodo di conservazione dei campioni sono tutti fattori estremamente importanti. Le condizioni di raccolta e conservazione dei campioni di plasma devono essere standardizzate ed attentamente controllate. I risultati imprevisti devono essere confermati da ulteriori test. I frammenti di piastrine presenti in un campione possono causare il rilascio di fosfolipidi e pertanto la neutralizzazione di un eventuale lupus inibitore contenuto nel campione stesso. Deve essere evitato l'utilizzo di campioni con piccoli volumi plasmatici in ragione delle possibili variazioni fisiologiche di pH. I test possono essere influenzati da svariati farmaci[5]. Un aumento dei risultati dell'aPTT può essere attribuito alla somministrazione di difenilidantoina, eparina, warfarin e agenti radiografici[5,8]. Una riduzione dei valori di aPTT può essere osservata durante l'impiego di contraccettivi orali o nelle terapie estrogeniche maschili[9,10]. Pertanto, i laboratori dovranno determinare i propri valori previsti per i pazienti e precisi standard prestazionali per il controllo.

CONTROLLO QUALITÀ

Ogni laboratorio deve definire un programma di controllo qualità. I plasmi di controllo normali e anormali devono essere testati prima di ogni lotto di campioni di pazienti, per garantire un livello prestazionale soddisfacente sia per quanto riguarda lo strumento che per l'operatore. Qualora i controlli non funzionassero come previsto, i risultati relativi ai pazienti dovranno essere considerati non validi.
Helena Biosciences Europe mette a disposizione i seguenti controlli utilizzabili con questo prodotto:

REF 5186	Routine Control N
REF 5187	Routine Control A
REF 5183	Routine Control SA
REF 5301	Speciality Assayed Control N
REF 5302	Speciality Assayed Control A

VALORI DI RIFERIMENTO

Per la sicurezza del paziente, è necessario che il sistema sia monitorato continuamente da un operatore qualificato. Per tale motivo ciascun laboratorio dovrà elaborare i propri range di riferimento.

CARATTERISTICHE PRESTAZIONALI

Le seguenti caratteristiche prestazionali sono state determinate da Helena Biosciences Europe o dai propri rappresentanti con l'utilizzo di uno strumento di coagulazione foto-ottico. Ciascun laboratorio dovrà pertanto elaborare i propri dati prestazionali.

Riproducibilità

		Precisione intra-dosaggio		Precisione tra i dosaggi		
Campione	*n*	*Formazione del coagulo (secondi)*	*CV (%)*	*n*	*Formazione del coagulo (secondi)*	*CV (%)*
Routine Control N	10	33,0	0,36	100	32,9	2,41
Routine Control SA	10	77,9	0,31	100	78,3	0,77

% Fattore	Fattore VIII (secondi)	Fattore IX (secondi)	Fattore XI (secondi)
<1	85,7	70,9	92,4
10	45,9	44,4	50,7
40	34,2	33,9	34,4
100	28,8	28,8	28,8

Eparina (IU/mL)	Formazione del coagulo (secondi)
0	29,9
0,2	70,0
0,4	174,0

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APTT Si L Minus
Instrucciones de uso

es

USO PREVISTO

El uso previsto del kit APTT Si L Minus es realizar ensayos de hemostasia basados en la coagulación.

Para usar en la determinación de los tiempos de tromboplastina parcial activada (TTPa), y procedimientos de coagulación relacionados usando extracto de fosfolípido con de partículas casi-coloidal como activador. El sistema de prueba puede usarse con métodos manuales, semiautomatizados y automatizados. Desde su definición por parte de Langdell et al[1] y tras diversas aportaciones de Proctor y Rapaport[2], el TTPa se utiliza para detectar trastornos del sistema de coagulación intrínseco, que implica a los factores de coagulación VIII, IX, XI, XII, precalicreína y cininógeno de alto peso molecular. El TTPa se usa también en ensayos que cuantifican estos factores y se usa rutinariamente para el cribado prequirúrgico y la monitorización del tratamiento con heparina[3]. Los reactivos disponibles comercialmente usan normalmente uno de tres activadores: caolín, sílice o ácido elágico. En la prueba de cribado básica, el TTPa mide indirectamente la formación de trombina por su acción sobre el fibrinógeno que forma el coágulo de fibrina. En la prueba, el plasma de prueba citratado se mezcla con reactivo de TTPa durante un período de tiempo especificado (normalmente 5 minutos) a +37°C seguido por la adición de cloruro cálcico (0,025 M) precalentado (+37°C). La temporización comienza desde el momento de la adición de cloruro cálcico. El tiempo necesario para la formación del coágulo es el TTPa. La detección de coágulos puede hacerse mediante medición mecánica, manual (tubo inclinado) o fotoóptica.

ADVERTENCIAS Y PRECAUCIONES

Los reactivos que contiene este kit son sólo para uso de diagnóstico *in vitro*: NO INGERIR. Lleve el equipo de protección personal adecuado cuando utilice todos los componentes del kit. Consulte la declaración de seguridad del producto para saber más sobre las indicaciones adecuadas de advertencia y riesgo. Desechar los componentes de conformidad con las normativas locales.

COMPOSICIÓN

Componente	Contiene	Descripción	Preparación
APTT Si L Minus	5 x 5 mL (REF 5562) 10 x 5 mL (REF 5560) 10 x 10 mL (REF 5559)	El reactivo contiene un activador de partículas casi-coloidal (magnesio-aluminiosilicato) que permite una sensibilidad óptima frente a los déficits de factor y frente a la heparina. El reactivo contiene asimismo un fosfolípido con tampón y estabilizadores.	Antes de utilizar, esperar a que alcance la temperatura ambiente. Antes de utilizar mezclar bien mediante agitación suave o inversión.
Calcium Chloride: 0.025M	5 x 5 mL (REF 5562) 10 x 5 mL (REF 5560) 10 x 10 mL (REF 5559)	El reactivo es una solución de cloruro cálcico 0,025 M.	El reactivo viene envasado listo para usar.

Cada kit contiene instrucciones de uso.

ARTÍCULOS NECESARIOS NO SUMINISTRADOS

Puede usarse cualquier instrumento de coagulación electromecánico o foto-óptico diseñado para realizar pruebas de tiempos de tromboplastina parcial activada.

ALMACENAMIENTO, CADUCIDAD Y ESTABILIDAD

Los reactivos no abiertos son estables hasta la fecha de caducidad indicada cuando se conservan en las condiciones indicadas en el vial o en la etiqueta del kit. Conservar a una temperatura entre +2° –+8°C. NO CONGELAR. Tras su apertura, el producto es estable durante 30 días. Evitar un calentamiento prolongado.

RECOGIDA Y PREPARACIÓN DE LAS MUESTRAS

Debe usarse siempre plástico o vidrio siliconizado. Debe recogerse sangre (9 partes) en el anticoagulante citrato sódico al 3,2% o al 3,8% (1 parte). Separar el plasma después de la centrifugación a 1500 x g durante 15 minutos. El plasma debe conservarse a +2° –+8°C o +18 –+24°C. Las pruebas deberían terminarse en 4 horas desde la recogida de las muestras o el plasma puede conservarse congelado a -20°C durante 2 semanas o -70°C durante 6 mes. Descongelar rápidamente a +37°C antes de realizar la prueba. No conservar a +37°C durante más de 5 minutos[4]. Esto minimizará la neutralización del inhibidor lupus. Pueden producirse resultados erróneos por contaminación con líquidos tisulares o estasia. Evitar la agitación, las burbujas de aire o la formación de espuma. Para comprobar los efectos de los fármacos que se suelen administrar, consultar Young, *et al.*[5].

PROCEDIMIENTO

Método Manual

1. Precalentar a +37°C el APTT Si L Minus y el cloruro cálcico 0,025 M bien mezclados.
2. Precalentar 0,1 mL de plasma problema, por duplicado, a +37°C durante 2 minutos.
3. Añadir 0,1 mL de APTT Si L Minus precalentado al plasma y activar el temporizador. Incubar durante exactamente 5 minutos a +37°C.
4. Añadir 0,1 mL de cloruro cálcico 0,025 M precalentado.
5. Anotar el momento de la formación del coágulo. Registrar el resultado como tiempo TTPa (en segundos).

Método Automatizado

Consulte el manual del usuario del instrumento adecuado para instrucciones detalladas o póngase en contacto con Helena Biosciences Europe para notas de aplicación específicas del instrumento.

INTERPRETACIÓN DE LOS RESULTADOS

Los resultados de la prueba de TTPa deben comunicarse a la décima de segundo más próxima. Cada laboratorio debe establecer el intervalo normal (habitualmente, X ± 2 desviaciones estándar). Los resultados mayores que los límites superiores del intervalo normal deben considerarse anormales y deben realizarse pruebas de seguimiento. Cualquier valor de TPPa menor que los límites inferiores del intervalo normal deben repetirse en una nueva muestra de sangre. Pueden verse valores de TTPa cortos en asociación con la trombosis *in vivo* (p. ej., trombosis venosa profunda y coagulación intravascular diseminada).

Monitorización de la heparina

Cuando monitorice el tratamiento con heparina, es importante construir una curva de referencia *in vitro* que refleje el promedio de respuesta de la heparina, porque los pacientes individuales responden de forma diferente a la heparina. En general, se puede considerar el intervalo terapéutico para la heparina como de 0,2 a 0,5 unidades/mL[3,6].
Deben considerarse las siguientes precauciones a la hora de monitorizar el tratamiento con heparina:

1. El momento de la recogida es importante, porque la heparina tiene una semivida *in vivo* de sólo 1,5 horas[7].
2. Debe evitarse la liberación de factor 4 plaquetario (factor neutralizador de heparina) ocasionada por la agregación plaquetaria o por daños durante la recogida. Una recogida de sangre cuidadosa, una buena centrifugación y una eliminación rápida del plasma pobre en plaquetas de las células, contribuirán a minimizar la liberación de factor 4 plaquetario.
3. Deben establecerse datos basales sobre los TTPa de cada paciente antes del tratamiento para determinar el TTPa respectivo del paciente ya que se relaciona con el intervalo normal establecido por el laboratorio.
4. Sistemas de detección de coágulos distintos (mecánica, fotoópticos, etc.) muestran sensibilidades variables a la heparina. Debe utilizarse el mismo sistema de prueba a la hora de monitorizar pacientes heparinizados.
5. Deben reestablecerse las curvas de respuesta a la heparina cuando cambien los números de lote de los reactivos y a intervalos periódicos con el mismo número de lote.
6. Debe construirse también la curva usando la misma heparina empleada en el tratamiento para eliminar las variables relacionadas con las heparinas de fuentes diferentes (p. ej., mucosa porcina o pulmón bovino).

LIMITACIONES

Los valores esperados para la prueba de TTPa variarán de un laboratorio a otro, dependiendo de la técnica usada. El método de detección de los coágulos, la temperatura, el pH, la técnica de recogida, el tipo de anticoagulante y el tiempo y el método de almacenamiento de la muestra son todos muy importantes. Las condiciones de recogida y conservación de las muestras de plasma deben estandarizarse y controlarse cuidadosamente. Los resultados inesperados deben confirmarse mediante pruebas adicionales. Los fragmentos plaquetarios presentes en una muestra pueden ocasionar la liberación de fosfolípidos y, con ello, la neutralización de cualquier inhibidor lupus presente en la muestra. Debe evitarse el uso de muestras con volúmenes pequeños de plasma debido a posibles cambios fisiológicos de pH. Las pruebas pueden verse afectadas por diversos fármacos[5]. Un aumento en los resultados de TTPa puede estar causado por la administración de difenilhidantoina, heparina, warfarina y agentes radiográficos[5,8]. Se puede comprobar un descenso en los valores de TTPa mientras se usan contraceptivos orales o tratamientos con estrógenos para hombres[9,10]. Por ello, los laboratorios deben establecer sus propios valores esperados para pacientes y estándares de rendimiento bien definidos para el control.

CONTROL DE CALIDAD

Cada laboratorio debe establecer un programa de control de calidad. Los controles normales y anormales deben estudiarse antes de cada lote de muestras del paciente, para asegurar un funcionamiento adecuado del instrumento y el operador. Si los controles no se realizan como se esperaba, los resultados del paciente deben considerarse inválidos.
Helena Biosciences Europe suministra los siguientes controles disponibles para usar con este producto:

REF 5186	Routine Control N
REF 5187	Routine Control A
REF 5183	Routine Control SA
REF 5301	Speciality Assayed Control N
REF 5302	Speciality Assayed Control A

VALORES DE REFERENCIA

Los valores de referencia pueden variar entre los laboratorios dependiendo de las técnicas y sistemas usados. Por esta razón, cada laboratorio debe establecer sus propios intervalos de referencia.

CARACTERÍSTICAS FUNCIONALES

Las siguientes características de rendimiento han sido determinadas por Helena Biosciences Europe o sus representantes usando un instrumento de coagulación foto-óptico. Cada laboratorio debe establecer sus propios datos de rendimiento.

Riproducibilità

		Precisión intra-ensayo		Precisión inter-ensayo		
Muestra	*n*	*Formación del coágulo (segundo)*	*CV (%)*	*n*	*Formación del coágulo (segundo)*	*CV (%)*
Routine Control N	10	33,0	0,36	100	32,9	2,41
Routine Control SA	10	77,9	0,31	100	78,3	0,77

% Factor	Factor VIII (segundo)	Factor IX (segundo)	Factor XI (segundo)
<1	85,7	70,9	92,4
10	45,9	44,4	50,7
40	34,2	33,9	34,4
100	28,8	28,8	28,8

Heparina (IU/mL)	Formación del coágulo (segundo)
0	29,9
0,2	70,0
0,4	174,0

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Тест-система "Активированное частичное тромбопластиновое время (кремниевый активатор L минус)"
инструкция

ru

НАЗНАЧЕНИЕ

Комплект APTT Si L Minus предназначен для выполнения анализов гемостаза на основе кровяного сгустка.

Используется для определения активированного частичного тромбопластинового времени (АЧТВ) и сопутствующих процессов коагуляции с использованием фосфолипидного экстракта и активатора околоколлоидных частиц. Тестовая система может использоваться в ручном, полуавтоматическом и автоматическом режиме. С момента возникновения, в работе Лангделла и его коллег[1] и позднее переработанный Проктором и Рапапортом[2] показатель АЧТВ используется для определения нарушений во врожденной системе коагуляции, которая включает факторы коагуляции VIII, IX, XI, XII, прекалликреин и высокомолекулярный кининоген. АЧТВ также используется в анализах для подсчета данных факторов и обычно используется для скрининга и мониторинга гепариновой терапии перед хирургическим вмешательством. Антифосфолипидные антитела и неспецифичные ингибиторы (волчаноподобные антикоагулянты) могут стать причиной пролонгированных значений АЧТВ. Однако признано, что данный эффект связан с концентрацией ингибитора и является непоследовательным[3]. Реагенты доступные в торговой сети обычно используют один из трех активаторов: каолин, кремень или эллаговую кислоту. В базовом скрининговом исследовании активированное частичное тромбопластиновое время косвенно измеряет образование тромбина путем воздействия на фибриноген, формирующий фибриновые тромбы. В исследовании цитратная тестируемая плазма смешивается с реагентом АЧТВ в течение указанного промежутка времени (обычно 5 минут) при температуре +37°C, после чего добавляется предварительно подогретый хлорид кальция (0,025 M). Отсчет времени начинается со времени добавления хлорида кальция. Время, требуемое для образования тромбов, является АЧТВ. Определение тромбов может происходить путем механического, фотооптического измерения или вручную (наклонная пробирка).

ПРЕДУПРЕЖДЕНИЯ И МЕРЫ ПРЕДОСТОРОЖНОСТИ

Содержащиеся в данном наборе реагенты предназначены только для *in vitro* диагностики– НЕ ПРИНИМАТЬ ВНУТРЬ! При работе со всеми компонентами набора использовать соответствующие средства индивидуальной защиты. В случае необходимости см. свидетельство о безопасности изделия для ознакомления с соответствующими описаниями опасного воздействия и сведениями о мерах предосторожности. Удаление компонентов в отходы производите в соответствии с местными правилами.

СОСТАВ

Состав	Содержание набора	Описание	Приготовление
АЧТВ (кремниевый активатор L минус)	5 x 5 mL (Кат. № 5562) 10 x 5 mL (Кат. № 5560) 10 x 10 mL (Кат. № 5559)	Реагент содержит активатор околоколлоидных частиц (силикат магния-алюминия) для оптимальной чувствительности к дефицитам фактора и к гепарину. Реагент также содержит фосфолипиды с буфером.	Доведите до комнатной температуры перед использованием. Хорошо перемешайте вращательными движениями или путем переворачивания перед использованием.
Хлорид кальция 0,025M	5 x 5 mL (Кат. № 5562) 10 x 5 mL (Кат. № 5560) 10 x 10 mL (Кат. № 5559)	Реагент представляет собой раствор хлорида кальция 0,025 M.	Реагент готов к использованию.

В каждом наборе имеется инструкция по применению.

НЕОБХОДИМЫЕ КОМПОНЕНТЫ, НЕ ВКЛЮЧЕННЫЕ В КОМПЛЕКТ ПОСТАВКИ

Может использоваться любой высококачественный электромеханический или фотооптический коагулометр для измерения АЧТВ.

ХРАНЕНИЕ, СРОК ГОДНОСТИ И УСТОЙЧИВОСТЬ

Невскрытые флаконы остаются стабильными до истечения срока годности при хранении в условиях, указанных на флаконе или этикетке набора. Не замораживайте. Стабильность сохраняется в течение 30 дней после вскрытия. Избегайте длительного нагревания.

ОТБОР И ПОДГОТОВКА ОБРАЗЦОВ

Для работы следует использовать только пластиковые или силиконизированные стеклянные пробирки. Кровь (9 частей) забирается в пробирку с антикоагулянтом цитрата натрия 3,2% или 3,8% (1 часть). Отделите плазму после центрифугирования при 1500 g в течение 15 минут. Плазму следует хранить при температуре +2° –+8°C или +18 –+24°C. Исследование должно быть завершено в течение 4 часов после забора образцов, либо плазму можно заморозить при -20°C и хранить 2 недели, а при замораживании при -70°C она может храниться в течение 6 месяцев. Размораживайте быстро при +37°C до проведения исследования. Не держите более 5 минут при температуре +37°C[4].

ПРОЦЕДУРА

Ручной Метод

1. Предварительно нагрейте хорошо перемешанную тест-систему и хлорид кальция 0,025 M до +37°C.
2. Предварительно нагрейте две части исследуемой плазмы, по 0,1 мл каждая, до +37°C в течение 2 минут.
3. Принудительно добавьте 0,1 мл предварительно нагретую тест-систему к плазме и включите таймер. Инкубируйте точно 5 минут при температуре +37°C.
4. Добавьте 0,1 мл согретого хлорида кальция 0,025 M.
5. Отметьте время образования тромбов. Результаты отразите как АЧТВ (в секундах).

Автоматизированный Метод

Обратитесь к соответствующей инструкции по эксплуатации прибора за подробной информацией или обратитесь в компанию "Хелена Байосайенсес Европ" за получением справочной информации применительно к конкретному прибору.

ИНТЕРПРЕТАЦИЯ РЕЗУЛЬТАТОВ

Результаты теста на АЧТВ должны указываться до ближайшей 1/10 секунды. Нормальный диапазон (обычно X±2 стандартные отклонения) должен устанавливаться для каждой лаборатории. Результаты, превышающие верхние пороговые значения нормального диапазона должны считаться атипичными и должно проводиться последующее исследование. Любые значения АЧТВ меньше нижних пороговых значений нормального диапазона должны быть повторены на новом образце крови. Низкие значения АЧТВ могут ассоциироваться с тромбозом в организме (например, тромбозом глубоких вен и распространенной внутрисосудистой коагуляцией).

Мониторинг гепарина

При мониторинге гепариновой терапии важно построить калибровочную лабораторную кривую, которая отражает среднее значение гепаринового ответа, поскольку разные пациенты по-разному реагируют на гепарин. В целом, можно считать, что терапевтический диапазон для гепарина составляет от 0,2 до 0,5 ЕД/мл[3,6].
Следует принимать во внимание следующие предостережения при мониторинге гепариновой терапии:

1. Время забора имеет значение, так как время полувыведения гепарина в организме составляет только 1,5 часа[7].
2. Необходимо избегать высвобождения фактора тромбоцита 4 (фактор нейтрализации гепарина), вызванного агрегацией тромбоцитов или повреждением в ходе забора. Осторожный забор крови, правильное центрифугирование и быстрое удаление плазмы бедной на тромбоциты из клеток поможет минимизировать высвобождение фактора тромбоцитов 4.
3. Исходные данные о АЧТВ каждого пациента должны быть установлены до проведения терапии для определения АЧТВ соответствующего пациента в соотношении с нормальным диапазоном, установленным лабораторией.
4. Разные системы определения тромбов (механическая, фотооптическая и др.) демонстрируют разную чувствительность к гепарину. Такая же система исследования должна использоваться при мониторинге пациентов, которым проводится гепариновая терапия.
5. Кривые гепаринового ответа должны быть построены повторно при изменении номеров партий реагентов и через периодические интервалы для одной и той же партии.
6. Кривая также должна быть построена с использованием такого же гепарина, который применялся в терапии, во избежание колебаний, связанных с гепарином, взятым из разных источников (например, свиная слизистая оболочка или бычье легкое).

ОГРАНИЧЕНИЯ

Ожидаемые результаты исследования на АЧТВ будут различными в разных лабораториях в зависимости от используемого метода. Метод клоттингового определения, температура, pH, техника забора, тип антикоагулянта, время и способ хранения образца очень важны. Забор образца плазмы и условия хранения должны быть стандартизованы и тщательно контролироваться. Непредвиденные результаты должны быть подтверждены дополнительными тестами. Фрагменты тромбоцитов, имеющиеся в пробе, могут высвободить фосфолипиды и тем самым нейтрализацию любого ингибитора волчанки, имеющегося в пробе. Необходимо избегать использования проб с небольшим объемом плазмы ввиду возможных изменений физиологического pH. На результаты исследования могут оказать влияние некоторые лекарственные средства[5]. Повышенный уровень АЧТВ может быть вызван приемом дифенилгидантоина, гепарина, варфарина и радиографических веществ[5,8]. Сниженные показатели АЧТВ могут наблюдаться в ходе приема оральных контрацептивов или эстрогеновой терапией у мужчин[9,10]. То есть, лаборатории должны устанавливать свои собственные ожидаемые значения для пациентов, а также четкие стандарты для контроля рабочих характеристик.

КОНТРОЛЬ КАЧЕСТВА

Каждая лаборатория должна иметь программу контроля качества. Нормальная контрольная плазма и контрольная плазма с отклонениями должны тестироваться перед каждой партией образцов плазмы пациентов для обеспечения правильной работы прибора и лаборанта. Если контрольные образцы не дают ожидаемых результатов, результаты анализа образцов пациентов считаются недействительными.
Компания "Хелена Байосайенсес Европ" предоставляет следующие контрольные образцы для использования с данным продуктом:

Кат. № 5186	Контроль качества, норма
Кат. № 5187	Контроль качества, умеренно выраженная патология
Кат. № 5183	Контроль качества, высокая патология
Кат. № 5301	Контроль качества специальные тесты, норма
Кат. № 5302	Контроль качества специальные тесты, патология

НОРМАЛЬНЫЕ ПОКАЗАТЕЛИ

Контрольные значения могут быть различными в разных лабораториях, в зависимости от используемых методов и систем. В связи с этим каждая лаборатория должна установить собственные показатели контрольных диапазонов.

ЭКСПЛУАТАЦИОННЫЕ ХАРАКТЕРИСТИКИ

Следующие рабочие характеристики были определены компанией "Хелена Байосайенсес Европ" или ее представителями с использованием фотооптического коагулометра. Каждая лаборатория должна установить собственные рабочие характеристики.

Изучение повторяемости

		Внутрианалитическая сходимость		Внутрианалитическая сходимость		
Образец	*Число образцов*	*Образование тромбов (секунды)*	*CV (%)*	*Число образцов*	*Образование тромбов (секунды)*	*CV (%)*
Контроль качества, норма	10	33,0	0,36	100	32,9	2,41
Контроль качества, высокая патология	10	77,9	0,31	100	78,3	0,77

% Фактор	Фактор VIII (секунды)	Фактор IX (секунды)	Фактор XI (секунды)
<1	85,7	70,9	92,4
10	45,9	44,4	50,7
40	34,2	33,9	34,4
100	28,8	28,8	28,8

Гепарин (МЕ/мл)	Образование тромбов (секунды)
0	29,9
0,2	70,0
0,4	174,0

ЛИТЕРАТУРА

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Declaration of Conformity

HL-7-DC-0814 Rev. 1

In Application of the Council Directive 98/79/EC on the approximation of the laws of the Member States relating to *In Vitro* Diagnostic Medical Devices & CE marking.

Declaration of conformance to applicable sections of Annex I - Essential Requirements and Annex III (EC Declaration of Conformity) imposed by sections 2 to 5. The below listed products are not classified under Annex II Lists A or B. Access to the appropriate technical files will be made available to the appropriate body in the event this is required.

Product Code	Description	GMDN Classification Code
5560	APTT Si L Minus	55981

I, the undersigned, declare that the devices registered against the above GMDN Classification Code conforms to the said Directives.

Full Name: C.J. Sandercock Title: QA and Regulatory Affairs Officer

Signed: Date: 24 Nov 2020

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The Netherlands

Declaration of Conformity

HL-7- 0512 DC DOI 2013/08 (4)

In Application of the Council Directive 98/79/EC on the approximation of the laws of the Member States relating to *In Vitro Diagnostic Medical Devices & CE marking.*

Declaration of conformance to applicable sections of Annex I - Essential Requirements and Annex III (EC Declaration of Conformity) imposed by sections 2 to 5. The below listed products are not classified under Annex II Lists A or B. Access to the appropriate technical files will be made available to the appropriate body in the event this is required.

Product Code	Description	GMDN Classification Code
5556	Clauss Fibrinogen 50	55997
5556H	Clauss Fibrinogen 50	55997

I, the undersigned declare that the devices registered against the above GMDN Classification Code conforms to the said Directives.

Full Name: M.J. Stephenson

Title: Managing Director

Signed:

Date: 05 Aug 2013

Tel +44 (0)191 482 8440
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Helena Biosciences Europe
Queensway South, Team Valley Trading Estate,
Gateshead, Tyne and Wear, NE11 0SD,
United Kingdom

Certificate

Standard	**ISO 9001:2015**
Certificate Registr. No.	**01 100 1810016**

Certificate Holder:

nal von minden GmbH
Carl-Zeiss-Str. 12
47445 Moers
Germany

including the locations according to annex

Scope:

Design and development, manufacture and distribution of in-vitro diagnostic test kits and reagents for the detection of cardiac markers, tumour markers, infections, inflammation, allergies, endocrine disorders, diabetes, hormones, vitamins, special proteins, metabolic disorders, drug misuse, immune status, vaginal pH levels, pregnancy, kidney function, for urine analysis, performance diagnostics, sperm testing, coagulation management systems, for use in clinical laboratories, as near-patient tests and for self-testing and associated in-vitro diagnostic devices for sampling and analysis systems, as well as veterinary diagnostic devices and testing for narcotics and substances.
Distribution of control materials and tests for blood group determination, medical masks, medical gloves, blood pressure monitoring devices, medical thermometers, swabs, lancets and laboratory analyses.

Proof has been furnished by means of an audit that the requirements of ISO 9001:2015 are met.

Validity:

The certificate is valid from 2021-09-10 until 2024-09-09.
First certification 2018

2021-09-10

TÜV Rheinland Cert GmbH
Am Grauen Stein · 51105 Köln

www.tuv.com

DAkkS Deutsche Akkreditierungsstelle D-ZM-16031-01-00

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Precisely Right.

Annex to certificate

Standard **ISO 9001:2015**

Certificate Registr. No. **01 100 1810016**

No.	Location	Scope
/01	c/o nal von minden GmbH Carl-Zeiss-Str. 12 47445 Moers Germany	Design and development, manufacture and distribution of in-vitro diagnostic test kits and reagents for the detection of cardiac markers, tumour markers, infections, inflammation, allergies, endocrine disorders, diabetes, hormones, vitamins, special proteins, metabolic disorders, drug misuse, immune status, vaginal pH levels, pregnancy, kidney function, for urine analysis, performance diagnostics, sperm testing, coagulation management systems, for use in clinical laboratories, as near-patient tests and for self-testing and associated in-vitro diagnostic devices for sampling and analysis systems, as well as veterinary diagnostic devices and testing for narcotics and substances.Distribution of control materials and tests for blood group determination, medical masks, medical gloves, blood pressure monitoring devices, medical thermometers, swabs, lancets and laboratory analyses.

Annex to certificate

Standard **ISO 9001:2015**

Certificate Registr. No. **01 100 1810016**

/02	c/o nal von minden GmbH Friedenstr. 32 93053 Regensburg Germany	Design and development, distribution of in-vitro diagnostic test kits and reagents for the detection of cardiac markers, tumour markers, infections, inflammation, allergies, endocrine disorders, diabetes, hormones, vitamins, special proteins, metabolic disorders, drug misuse, immune status, vaginal pH levels, pregnancy, kidney function, for urine analysis, performance diagnostics, sperm testing, coagulation management systems, for use in clinical laboratories, as near-patient tests and for self-testing and associated in-vitro diagnostic devices for sampling and analysis systems, as well as veterinary diagnostic devices and testing for narcotics and substances.Distribution of control materials and tests for blood group determination, medical masks, medical gloves, blood pressure monitoring devices, medical thermometers, swabs, lancets and laboratory analyses.

Annex to certificate

Standard **ISO 9001:2015**

Certificate Registr. No. **01 100 1810016**

/03	c/o nal von minden GmbH Robert-Bosch-Breite 34 37079 Göttingen Germany	Design and development, manufacture and distribution of in-vitro diagnostic test kits and reagents for the detection of cardiac markers, tumour markers, infections, inflammation, allergies, endocrine disorders, diabetes, hormones, vitamins, special proteins, metabolic disorders, drug misuse, immune status, vaginal pH levels, pregnancy, kidney function, for urine analysis, performance diagnostics, sperm testing, coagulation management systems, for use in clinical laboratories, as near-patient tests and for self-testing and associated in-vitro diagnostic devices for sampling and analysis systems, as well as veterinary diagnostic devices and testing for narcotics and substances.Distribution of control materials and tests for blood group determination, medical masks, medical gloves, blood pressure monitoring devices, medical thermometers, swabs, lancets and laboratory analyses.

2021-09-10

TÜV Rheinland Cert GmbH
Am Grauen Stein · 51105 Köln

EC Certificate

Directive 98/79/EC Annex IV, excluding Sections 4 and 6
Full Quality Assurance System
In Vitro Diagnostic Medical Devices

Registration No.: HL 60119814 0001

Report No.: 21265422 001

Manufacturer:
Macherey-Nagel GmbH & Co. KG
Neumann-Neander-Str. 6-8
52355 Düren
Deutschland

Products:
Products for self-testing

(see attachment for products and sites included)

Replaces Certificate, Registration No.: HL 60076687 0001

Expiry Date: 2022-05-28

The Notified Body hereby declares that the requirements of Annex IV, excluding section 4 and 6 of the directive 98/79/EC have been met for the listed products. The above named manufacturer has established and applies a quality assurance system, which is subject to periodic surveillance, defined by Annex IV, section 5 of the aforementioned directive. For placing on the market of List A devices covered by this certificate an EC design-examination certificate according to Annex IV, section 4 and a verification of manufactured products according to section 6 is required.

Effective Date: 2017-05-29

Date: 2017-05-29

Notified Body

Dipl.-Ing. Sven Hoffmann

TÜV Rheinland LGA Products GmbH - Tillystraße 2 - 90431 Nürnberg

TÜV Rheinland LGA Products GmbH is a Notified Body according to Directive 98/79/EC concerning in vitro diagnostic medical devices with the identification number 0197.

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Doc. 1/1, Rev. 0

TÜV Rheinland
LGA Products GmbH
Tillystraße 2, 90431 Nürnberg

Attachment to Certificate
Registration No.: HL 60119814 0001
Report No.: 21265422 001

Manufacturer:
Macherey-Nagel GmbH & Co. KG
Neumann-Neander-Str. 6-8
52355 Düren
Deutschland

Products for self-testing:
- Single and multi-parameter disposable test strips for urine analysis
- indicator test strips and papers for measurement of pH in urine

Additional site for warehousing and logistics:

Bahnstr. 120
52355 Düren, Germany

Notified Body

TÜV Rheinland LGA Products GmbH TÜVRheinland® Zertifizierungsstelle

Date: 2017-05-29

Dipl.-Ing. Sven Hoffmann

Certificate

TÜVRheinland®

Quality Management System
EN ISO 13485:2016

Registration No.: SX 1038121-1

Organization:
MACHEREY-NAGEL GmbH & Co. KG
Neumann-Neander-Str. 6-8
52355 Düren
Germany

Scope:
Design and development, manufacture and distribution of in vitro diagnostic test strips including self-testing devices and reflectometers used in the field of urine, gastric and vaginal fluid analysis, as well as in vitro diagnostic products for bioanalytical sample preparation.

(see attachment for sites included)

The Certification Body of TÜV Rheinland LGA Products GmbH certifies that the organization has established and applies a quality management system for medical devices.
Proof has been furnished that the requirements specified in the abovementioned standard are fulfilled. The quality management system is subject to yearly surveillance.

Report No.: 3309079-90

Effective date: 2020-05-29

Expiry date: 2023-05-28

Issue date: 2020-05-28

TÜV Rheinland LGA Products GmbH
TÜVRheinland®
Zertifizierungsstelle

Dipl.-Ing. S. Hoffmann
TÜV Rheinland LGA Products GmbH
Tillystraße 2 · 90431 Nürnberg · Germany

DAkkS
Deutsche
Akkreditierungsstelle
D-ZM-14169-01-02

Certificate

TÜVRheinland®

Quality Management System
EN ISO 13485:2016

Registration No.: SX 1038121-1

Organization: MACHEREY-NAGEL GmbH & Co. KG
Neumann-Neander-Str. 6-8
52355 Düren
Germany

No.	Facility	Scope
/02	MACHEREY-NAGEL GmbH & Co. KG Valencienner Str. 11 52355 Düren Germany	Design and development, manufacture, quality control, distribution and customer service
/03	MACHEREY-NAGEL GmbH & Co. KG Bahnstr. 120 52355 Düren Germany	Warehousing and logistics

Report No.: 3309079-90

Effective date: 2020-05-29

Expiry date: 2023-05-28

Issue date: 2020-05-28

DAkkS
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Akkreditierungsstelle
D-ZM-14169-01-02

TÜV Rheinland LGA Products GmbH
TÜVRheinland®
Zertifizierungsstelle

Dipl.-Ing. S. Hoffmann
TÜV Rheinland LGA Products GmbH
Tillystraße 2 · 90431 Nürnberg · Germany

Certificate

Standard **ISO 9001:2015**

Certificate Registr. No. **01 100 1810008**

Certificate Holder: **MACHEREY-NAGEL GmbH & Co. KG**
Neumann-Neander-Str. 6-8
52355 Düren
Germany

including the locations according to annex

Scope: Design and development, production and distribution of products for filtration, rapid tests, water analysis, chromatography and bioanalysis

Proof has been furnished by means of an audit that the requirements of ISO 9001:2015 are met.

Validity: The certificate is valid from 2020-05-29 until 2023-05-28.

2020-05-25

TÜV Rheinland Cert GmbH
Am Grauen Stein · 51105 Köln

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Annex to certificate

Standard **ISO 9001:2015**

Certificate Registr. No. **01 100 1810008**

No.	Location	Scope
/01	MACHEREY-NAGEL GmbH & Co. KG Neumann-Neander-Str. 6-8 52355 Düren Germany	Design, development and production of products for chromatography and bioanalysis
/02	MACHEREY-NAGEL GmbH & Co. KG Valencienner Str. 11 52355 Düren Germany	Design, development, production and distribution of products for filtration, rapid tests, water analysis. Service and administration
/03	MACHEREY-NAGEL GmbH & Co. KG Papiermühle 50 52349 Düren Germany	Waste disposal
/04	MACHEREY-NAGEL GmbH & Co. KG Bahnstr. 120 52355 Düren Germany	Storage
/05	MACHEREY-NAGEL GmbH & Co. KG Monschauer Str. 64 52355 Düren Germany	Production

2020-05-25

TÜV Rheinland Cert GmbH
Am Grauen Stein · 51105 Köln

Certificate

TÜVRheinland®

Quality Management System
EN ISO 13485:2016

Registration No.: SX 1034230-1

Organization: nal von minden GmbH
Carl-Zeiss-Str. 12
47445 Moers
Germany

Scope: Design and development, manufacture and distribution of in vitro diagnostic test kits and reagents for the detection or determination of cardiac markers, tumor markers, infections, inflammation, allergies, endocrine disorders, diabetes, hormones, vitamins, special proteins, metabolic disorders, drug misuse, immune status, vaginal pH levels, pregnancy, kidney function, for urine analysis, sperm testing, coagulation management systems, for use in clinical laboratories, as near-patient tests and for self-testing as well as associated in vitro diagnostic devices for sampling and analysis systems for rapid tests.

Distribution of control materials and tests for blood group determination, medical masks, medical gloves, blood pressure monitoring devices, medical thermometers, swabs and lancets.

The Certification Body of TÜV Rheinland LGA Products GmbH certifies that the organization has established and applies a quality management system for medical devices.
Proof has been furnished that the requirements specified in the abovementioned standard are fulfilled. The quality management system is subject to yearly surveillance.

Report No.: 1089325-40
Effective date: 2021-12-02
Expiry date: 2024-12-01
Issue date: 2021-11-29

TÜV Rheinland LGA Products GmbH · TÜVRheinland® · Zertifizierungsstelle

Dipl.-Ing. Sven Hoffmann
TÜV Rheinland LGA Products GmbH
Tillystraße 2 · 90431 Nürnberg · Germany

DAkkS
Deutsche
Akkreditierungsstelle
D-ZM-14169-01-02

Certificate

TÜVRheinland®

Quality Management System
EN ISO 13485:2016

Registration No.: SX 1034230-1

Organization: nal von minden GmbH
Carl-Zeiss-Str. 12
47445 Moers
Germany

The scope of certification also covers the following:

No.	Facility	Scope
/01	c/o nal von minden GmbH Carl-Zeiss-Str. 12 47445 Moers Germany	Manufacture and distribution
/02	c/o nal von minden GmbH Friedenstr. 32 93053 Regensburg Germany	Design and development and distribution
/03	c/o nal von minden GmbH Robert-Bosch-Breite 34 37079 Göttingen Germany	Design and development and manufacture
/04	c/o nal von minden GmbH Raseweg 4 37124 Rosdorf Germany	Administration and distribution

Report No.: 1089325-40
Effective date: 2021-12-02
Expiry date: 2024-12-01
Issue date: 2021-11-29

TÜV Rheinland LGA Products GmbH
TÜVRheinland®
Zertifizierungsstelle

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Tillystraße 2 · 90431 Nürnberg · Germany

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D-ZM-14169-01-02

EC Certificate

Directive 98/79/EC Annex IV, excluding Sections 4 and 6
Full Quality Assurance System
In Vitro Diagnostic Medical Devices

Registration No.: HL 60131398 0001

Report No.: 21200072 015

Manufacturer:
nal von minden GmbH
Carl-Zeiss-Str. 12
47445 Moers
Deutschland

Products:
- IVDs for the detection of infectious disease markers
- IVDs for the detection of the tumor marker PSA
- Urine tests for self-testing

(see attachment for products and sites included)

Replaces Certificate, Registration No.: HL 60114562 0001

Expiry Date: 2023-11-27

The Notified Body hereby declares that the requirements of Annex IV, excluding section 4 and 6 of the directive 98/79/EC have been met for the listed products. The above named manufacturer has established and applies a quality assurance system, which is subject to periodic surveillance, defined by Annex IV, section 5 of the aforementioned directive. For placing on the market of List A devices covered by this certificate an EC design-examination certificate according to Annex IV, section 4 and a verification of manufactured products according to section 6 is required.

Effective Date: 2018-11-28

Date: 2018-11-27

Notified Body

Dipl.-Ing. Sven Hoffmann

TÜV Rheinland LGA Products GmbH - Tillystraße 2 - 90431 Nürnberg
TÜV Rheinland LGA Products GmbH is a Notified Body according to Directive 98/79/EC concerning in vitro diagnostic medical devices with the identification number 0197.

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TÜV Rheinland
LGA Products GmbH
Tillystraße 2, 90431 Nürnberg

Attachment to Certificate
Registration No.: HL 60131398 0001
Report No.: 21200072 015

Manufacturer: nal von minden GmbH
Carl-Zeiss-Str. 12
47445 Moers
Deutschland

Products included:

In vitro diagnostica for self-testing:
- HCG pregnancy tests
- LH ovulation tests
- Single- and multi-constituent test strips for urinalysis

In vitro diagnostica rapid tests:
- Chlamydia trachomatis Rapid Tests
- PSA Rapid Tests

Site included:

nal von minden GmbH
Friedenstr. 32
93053 Regensburg
Germany

Activities: Design and development

Notified Body

TÜV Rheinland LGA Products GmbH TÜVRheinland Zertifizierstelle

Date: 2018-11-27

Dipl.-Ing. Sven Hoffmann

Certificate

Standard	**ISO 9001:2015**
Certificate Registr. No.	**01 100 1810016**

Certificate Holder:

nal von minden GmbH
Carl-Zeiss-Str. 12
47445 Moers
Germany

including the locations according to annex

Scope:

Design and development, manufacture and distribution of in-vitro diagnostic test kits and reagents for the detection of cardiac markers, tumour markers, infections, inflammation, allergies, endocrine disorders, diabetes, hormones, vitamins, special proteins, metabolic disorders, drug misuse, immune status, vaginal pH levels, pregnancy, kidney function, for urine analysis, performance diagnostics, sperm testing, coagulation management systems, for use in clinical laboratories, as near-patient tests and for self-testing and associated in-vitro diagnostic devices for sampling and analysis systems, as well as veterinary diagnostic devices and testing for narcotics and substances.
Distribution of control materials and tests for blood group determination, medical masks, medical gloves, blood pressure monitoring devices, medical thermometers, swabs, lancets and laboratory analyses.

Proof has been furnished by means of an audit that the requirements of ISO 9001:2015 are met.

Validity:

The certificate is valid from 2021-09-10 until 2024-09-09.
First certification 2018

2021-09-10

TÜV Rheinland Cert GmbH
Am Grauen Stein · 51105 Köln

www.tuv.com

DAkkS Deutsche Akkreditierungsstelle D-ZM-16031-01-00

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Annex to certificate

Standard **ISO 9001:2015**

Certificate Registr. No. **01 100 1810016**

No.	Location	Scope
/01	c/o nal von minden GmbH Carl-Zeiss-Str. 12 47445 Moers Germany	Design and development, manufacture and distribution of in-vitro diagnostic test kits and reagents for the detection of cardiac markers, tumour markers, infections, inflammation, allergies, endocrine disorders, diabetes, hormones, vitamins, special proteins, metabolic disorders, drug misuse, immune status, vaginal pH levels, pregnancy, kidney function, for urine analysis, performance diagnostics, sperm testing, coagulation management systems, for use in clinical laboratories, as near-patient tests and for self-testing and associated in-vitro diagnostic devices for sampling and analysis systems, as well as veterinary diagnostic devices and testing for narcotics and substances.Distribution of control materials and tests for blood group determination, medical masks, medical gloves, blood pressure monitoring devices, medical thermometers, swabs, lancets and laboratory analyses.

Annex to certificate

Standard **ISO 9001:2015**

Certificate Registr. No. **01 100 1810016**

/02	c/o nal von minden GmbH Friedenstr. 32 93053 Regensburg Germany	Design and development, distribution of in-vitro diagnostic test kits and reagents for the detection of cardiac markers, tumour markers, infections, inflammation, allergies, endocrine disorders, diabetes, hormones, vitamins, special proteins, metabolic disorders, drug misuse, immune status, vaginal pH levels, pregnancy, kidney function, for urine analysis, performance diagnostics, sperm testing, coagulation management systems, for use in clinical laboratories, as near-patient tests and for self-testing and associated in-vitro diagnostic devices for sampling and analysis systems, as well as veterinary diagnostic devices and testing for narcotics and substances.Distribution of control materials and tests for blood group determination, medical masks, medical gloves, blood pressure monitoring devices, medical thermometers, swabs, lancets and laboratory analyses.

Annex to certificate

Standard **ISO 9001:2015**

Certificate Registr. No. **01 100 1810016**

/03	c/o nal von minden GmbH Robert-Bosch-Breite 34 37079 Göttingen Germany	Design and development, manufacture and distribution of in-vitro diagnostic test kits and reagents for the detection of cardiac markers, tumour markers, infections, inflammation, allergies, endocrine disorders, diabetes, hormones, vitamins, special proteins, metabolic disorders, drug misuse, immune status, vaginal pH levels, pregnancy, kidney function, for urine analysis, performance diagnostics, sperm testing, coagulation management systems, for use in clinical laboratories, as near-patient tests and for self-testing and associated in-vitro diagnostic devices for sampling and analysis systems, as well as veterinary diagnostic devices and testing for narcotics and substances.Distribution of control materials and tests for blood group determination, medical masks, medical gloves, blood pressure monitoring devices, medical thermometers, swabs, lancets and laboratory analyses.

2021-09-10

TÜV Rheinland Cert GmbH
Am Grauen Stein · 51105 Köln

IFTA AG
Natürlich. Für Zukunft.

CERTIFICATE

The certification body IFTA AG certifies

sifin diagnostics gmbh
Berliner Allee 317-321
13088 Berlin
Germany

the conformity of the introduced quality management system for the field of the development, manufacturing and sale of products for human and veterinary medical in-vitro-diagnostics as well as for the microbiological examination of water and food and other diagnostic applications with the standard

DIN EN ISO 9001:2015

Start of validity:	07.07.2020
End of validity:	06.07.2023
Report and certificate number:	IC00016 038 20
The certificate consists of	1 page

This certificate includes an annual examination of the QMS by IFTA AG according to the specified standard.

Berlin, 17.06.2020

Prof. Dr. Jörn Karge
CEO

DAkkS
Deutsche
Akkreditierungsstelle
D-ZM-16072-01-00

Certificate

mdc medical device certification GmbH
certifies that

sifin

sifin diagnostics gmbh
Berliner Allee 317-321
13088 Berlin
Germany

for the scope

development, manufacturing and distribution of
in vitro diagnostic medical devices for the product groups:
blood grouping, bacteriological test reagents and culture media as well as
manufacturing of raw materials for manufacturing of
in vitro diagnostic medical devices

has introduced and applies a

Quality Management System

The mdc audit has proven that this quality management system
meets all requirements of the following standard

EN ISO 13485

Medical devices – Quality management systems –
Requirements for regulatory purposes

EN ISO 13485:2016 + AC:2016 - ISO 13485:2016

Valid from	2021-10-23
Valid until	2024-10-22
Registration no.	D1058700050
Report no.	P21-00883-206453
Stuttgart	2021-07-23

Head of Certification Body

medical device certification mdc

DAkkS Deutsche Akkreditierungsstelle D-ZM-16002-06-00

mdc medical device certification GmbH
Kriegerstraße 6
D-70191 Stuttgart, Germany
Phone: +49-(0)711-253597-0
Fax: +49-(0)711-253597-10
Internet: http://www.mdc-ce.de

sifin

EG-Konformitätserklärung

CE-Declaration de Conformité / EC-Declaration of Conformity

CE

Testreagenzien Anti-Salmonella O, Vi

Réactifs de test Anti-Salmonella O, Vi
Test Reagents Anti-Salmonella O, Vi

Wir / Nous / We

sifin diagnostics gmbh
Berliner Allee 317-321, 13088 Berlin, Germany
phone +49-30-700-144-0, fax +49-30-700-144-30, info@sifin.de, www.sifin.de

erklären in eigener Verantwortung, dass
déclarons sous notre propre responsabilité que / declare on our own responsibility that

die Medizinprodukte (IVD):
les dispositifs médical (IVD) :
the medical devices (IVD):

Testreagenzien Anti-Salmonella O, Vi
Réactifs de test Anti-Salmonella O, Vi
Test Reagents Anti-Salmonella O, Vi

TR1201	Anti-Salmonella Group B
TR1201-01	Anti-Salmonella Group B
TR1202	Anti-Salmonella Group C
TR1203	Anti-Salmonella Group D
TR1203-01	Anti-Salmonella Group D
TR1204	Anti-Salmonella Group E
TR1301	Anti-Salmonella O:2
TR1302	Anti-Salmonella O:4
TR1302-01	Anti-Salmonella O:4
TR1303	Anti-Salmonella O:5
TR1303-01	Anti-Salmonella O:5
TR1304	Anti-Salmonella O:6_1
TR1305	Anti-Salmonella O:7
TR1306	Anti-Salmonella O:8
TR1307	Anti-Salmonella O:9
TR1307-01	Anti-Salmonella O:9
TR1308	Anti-Salmonella O:10
TR1323	Anti-Salmonella O:11
TR1325	Anti-Salmonella O:13
TR1309	Anti-Salmonella O:14
TR1310	Anti-Salmonella O:15
TR1328	Anti-Salmonella O:16
TR1329	Anti-Salmonella O:17
TS1330	Anti-Salmonella O:18
TR1311	Anti-Salmonella O:19
TR1312	Anti-Salmonella O:20
TR1331	Anti-Salmonella O:21

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EG-Konformitätserklärung
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CE

Testreagenzien Anti-Salmonella O, Vi
Réactifs de test Anti-Salmonella O, Vi
Test Reagents Anti-Salmonella O, Vi

TS1332	Anti-Salmonella O:22
TR1335	Anti-Salmonella O:25
TR1313	Anti-Salmonella O:27
TR1336	Anti-Salmonella O:28
TR1339	Anti-Salmonella O:30
TR1314	Anti-Salmonella O:34
TR1341	Anti-Salmonella O:35
TR1344	Anti-Salmonella O:38
TR1345	Anti-Salmonella O:39
TR1346	Anti-Salmonella O:40
TR1347	Anti-Salmonella O:41
TR1348	Anti-Salmonella O:42
TR1349	Anti-Salmonella O:43
TR1350	Anti-Salmonella O:44
TR1351	Anti-Salmonella O:45
TR1315	Anti-Salmonella O:46
TR1353	Anti-Salmonella O:47
TR1354	Anti-Salmonella O:48
TR1355	Anti-Salmonella O:50
TR1356	Anti-Salmonella O:51
TR1357	Anti-Salmonella O:52
TR1358	Anti-Salmonella O:53
TR1359	Anti-Salmonella O:54
TR1360	Anti-Salmonella O:55
TR1361	Anti-Salmonella O:56
TR1362	Anti-Salmonella O:57
TR1363	Anti-Salmonella O:58
TR1364	Anti-Salmonella O:59
TR1365	Anti-Salmonella O:60
TR1366	Anti-Salmonella O:61
TR1367	Anti-Salmonella O:62
TR1368	Anti-Salmonella O:63
TR1369	Anti-Salmonella O:65
TR1370	Anti-Salmonella O:66
TR1371	Anti-Salmonella O:67
TR1316	Anti-Salmonella Vi

Sonstige Produkte
Autres dispositifs/Other devices

allen Anforderungen der Richtlinie 98/79/EG entsprechen.
remplirent toutes les exigences de la Directive 98/79/EG qui le concernait.
meet all the provisions of the Directive 98/79/EG which apply to it.

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EG-Konformitätserklärung

CE-Declaration de Conformité / EC-Declaration of Conformity

CE

Testreagenzien Anti-Salmonella O, Vi

Réactifs de test Anti-Salmonella O, Vi

Test Reagents Anti-Salmonella O, Vi

Angewandte harmonisierte Normen: Normes nationales appliqués: Applied national standards:	DIN EN ISO 13485:2016, DIN EN 13612:2002, DIN EN 13641:2002, DIN EN ISO 14971:2013, DIN EN ISO 15223-1:2017, DIN EN ISO 18113-1:2013, DIN EN ISO 18113-2:2013, DIN EN ISO 23640:2015
Konformitätsbewertungsverfahren: Procèdure d'évaluation de la conformità: Conformity assessment procedure:	Anhang III Annexe III Annex III
Gültig bis: Valable jusqu'au: Valid until:	2022-05-25

Berlin, 23.10.2021

Dr. Kathrin Landgrebe
Sicherheitsbeauftragte für Medizinprodukte
Agent de sécurité / Safety Officer