Coagulation Control Plasmas

REF 5186 Routine Control N
REF 5187 Routine Control A
REF 5183 Routine Control SA
REF 5482 Routine Coagulation Control Set

CE IVD

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Coagulation Control Plasmas
Instructions for use — en

INTENDED PURPOSE

The Coagulation Control Plasmas kit is intended for use as a quality control material.

Routine Control N, Routine Control A and Routine Control SA are for use as normal, moderately prolonged and markedly prolonged controls for PT and aPTT assays. They are also assayed for Fibrinogen, TCT and ATIII, and are prepared from normal human plasma.

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.

Blood products have been screened and found negative (unless otherwise stated on the kit box or vial) for the presence of:
Hepatitis B Antigen (HbsAg)
HIV 1 antibody HIV 2 antibody
HCV antibody
However they should be handled with the same precautions as a human patient sample.

COMPOSITION

REF	Component	Content	Description
5186	Routine Control - N	10 x 1 mL	Prepared from pooled normal plasma.
5187	Routine Control - A	10 x 1 mL	Prepared from adsorbed human plasma.
5183	Routine Control - SA	10 x 1 mL	Prepared from adsorbed human plasma.
5482	Routine Coagulation Control Set:		
	Routine Control - N	4 x 1 mL	
	Routine Control - A	3 x 1 mL	
	Routine Control - SA	3 x 1 mL	
Each kit contains instructions for use.			
Each kit contains lot specific reference values insert.			

Each vial contains 1 mL of buffered, lyophilised human plasma.
Preparation: Reconstitute each vial of the appropriate control with 1 mL of distilled or deionised water. Swirl gently. Allow to stand for 10 minutes for complete dissolution and mix well before use.

ITEMS REQUIRED BUT NOT PROVIDED

Coagulation Control Plasmas may be used when performing tests on any mechanical or photo-optical coagulation instrument in conjunction with all suitable, commercial reagents.

STORAGE, SHELF-LIFE AND STABILITY

Unopened vials are stable until the given expiry date when stored under conditions indicated on the vial or kit label. The reconstituted controls are stable for 8 hours when kept at +2 – +8°C or 4 weeks at -20°C when flash frozen. Keep covered.

SAMPLE COLLECTION AND PREPARATION

Not applicable.

PROCEDURE

Each control should be treated in the same manner as the unknown specimen in accordance with the instructions outlined in each particular test protocol.

INTERPRETATION OF RESULTS

Routine Control N should give values within the laboratory normal range for PT, aPTT and fibrinogen assays. Routine Control A and Routine Control SA have been standardised to give prolonged and markedly prolonged PT and aPTT times respectively. Lot and instrument specific expected values are provided with each pack of controls.

LIMITATIONS

The results obtained with Coagulation Control Plasmas depend on several factors strongly associated with instrumentation, types of reagents, deficient substrates and laboratory to laboratory variations[1,2,3]. Each laboratory should establish an expected range for the particular instrument-reagent system.

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.

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 an opto-mechanical coagulation instrument. Each laboratory should establish its own performance data.

Reproducibility

		Intra-assay precision	
Sample	*n*	*aPTT CV (%)*	*PT CV (%)*
Routine Control N	5	2.83	1.01
Routine Control A	5	2.76	1.71
Routine Control SA	5	1.72	1.03

BIBLIOGRAPHY

1. Kirkwood TBL *et al.* (1977) Identification of Sources of Variation in Factor VIII Assay, *British Journal of Haematology,* **37:**559-568.
2. Goldenfarb MD (1971) Reproducibility in Coagulation Assays, *AJCP,* **55:**561-564.
3. Palkuti HA and Longberry JR (1973) A Precision Study of Coagulation Factor Assay Techniques, *AJCP,* **59:**231-235.

Plasmas de contrôle de coagulation
Fiche technique — fr

UTILISATION

Le kit Coagulation Control Plasmas est destiné à être utilisé comme produit de contrôle qualité.

Les contrôles Routine Control N, Routine Control A et Routine Control SA servent de témoins normal, modérément prolongé et nettement prolongé dans les déterminations du TP et du TCA. Le fibrinogène, la TCT et l'ATIII ont été dosés et ils sont préparés à partir de plasma humain normal.

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 églementations locales.

Un dépistage des produits sanguins a été réalisé et a donné un résultat négatif (sauf indication contraire sur la boîte du kit ou sur le flacon) quant à la présence de :
Antigène de l'hépatite B (AgHBs)
Anticorps anti-VIH 1
Anticorps anti-VIH 2
Anticorps anti-VHC
Cependant, ils doivent être manipulés avec les mêmes précautions que celles prises pour les échantillons patients humains.

COMPOSITION

REF	Composant	Contient	Description
5186	Routine Control - N	10 x 1 mL	Préparé à partir d'un pool de plasma normal.
5187	Routine Control - A	10 x 1 mL	Préparés à partir de plasma humain adsorbé.
5183	Routine Control - SA	10 x 1 mL	Préparés à partir de plasma humain adsorbé.
5482	Routine Coagulation Control Set:		
	Routine Control - N	4 x 1 mL	
	Routine Control - A	3 x 1 mL	
	Routine Control - SA	3 x 1 mL	
Chaque kit contient une fiche technique.			
Chaque kit contient valeurs de référence spécifiques du lot.			

Chaque flacon contient 1 mL de plasma humain tamponné lyophilisé.
Préparation: Reconstituer chaque flacon du contrôle approprié avec 1 mL d'eau distillée ou désionisée. Agiter doucement. Attendre 10 minutes jusqu'à dissolution totale et bien mélanger avant d'utiliser.

MATÉRIEL NÉCESSAIRE NON FOURNI

Le Coagulation Control Plasmas peut être utilisé dans les analyses réalisées sur des instruments de coagulation mécanique ou photo-optique avec les réactifs appropriés vendus dans le commerce.

CONSERVATION, DURÉE DE VIE UTILE ET STABILITÉ

Les flacons 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. Une fois reconstitués, les contrôles sont stables 8 heures entre +2 – +8°C ou 4 semaines à -20 °C en cas de congélation instantanée. Couvrir le produit.

PRÉLÈVEMENT ET PRÉPARATION DES ÉCHANTILLONS

Non applicable.

PROCÉDURE

Chaque contrôle doit être traité de la même manière que l'échantillon à analyser en observant les instructions de chaque protocole spécifique.

INTERPRÉTATION DES RÉSULTATS

Le Routine Control N doit donner des valeurs se situant dans la plage normale du laboratoire pour le TP, le TCA et le fibrinogène. Le Routine Control A et le Routine Control SA ont été standardisés pour donner des temps TP et TCA prolongés et très prolongés respectivement. Les valeurs prévues spécifiques du lot et de l'instrument sont fournies avec chaque kit de contrôles.

LIMITES

Les résultats obtenus avec le Coagulation Control Plasmas dépendent de plusieurs facteurs fortement corrélés avec l'instrument, les types de réactifs, les substrats carencés et les variations inter-laboratoires[1,2,3]. Le laboratoire doit déterminer une plage prévue pour chaque système instrument-réactif.

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.

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 opto-mécanique. Chaque laboratoire doit établir ses propres données de performance.

Reproductibilité

		Précision intra-série	
Échantillon	*n*	*TCA CV (%)*	*TP CV (%)*
Routine Control N	5	2.83	1.01
Routine Control A	5	2.76	1.71
Routine Control SA	5	1.72	1.03

BIBLIOGRAPHIE

1. Kirkwood TBL *et al.* (1977) Identification of Sources of Variation in Factor VIII Assay, *British Journal of Haematology,* **37:**559-568.
2. Goldenfarb MD (1971) Reproducibility in Coagulation Assays, *AJCP,* **55:**561-564.
3. Palkuti HA and Longberry JR (1973) A Precision Study of Coagulation Factor Assay Techniques, *AJCP,* **59:**231-235.

Kontrollplasma für die Gerinnung
Anleitung — de

VERWENDUNGSZWECK

Das Coagulation Control Plasmas-Kit ist für die Qualitätskontrolle vorgesehen.

Routine Control N, Routine Control A und Routine Control SA sind als normale, mäßig verzögerte und stark verzögerte Kontrollen für PT und aPTT Tests geeignet. Sie sind auch auf Fibrinogen, TZ und AT-III getestet und werden aus normalem Humanplasma hergestellt.

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.

Die Blutprodukte wurden untersucht und sind für folgende Gene ohne Befund (soweit nicht anderweitig auf der Verpackung oder den Ampullen angegeben):
Hepatitis-B-Antikörper (HbsAg)
HIV-Antikörper 1
HIV-Antikörper 2
HCV-Antikörper
Sie sind jedoch mit den gleichen Vorkehrungen zu behandeln wie Proben von menschlichen Patienten.

ZUSAMMENSETZUNG

REF	Komponente	Inhalt	Beschreibung
5186	Routine Control - N	10 x 1 mL	Aus gepooltem Humanplasma hergestellt.
5187	Routine Control - A	10 x 1 mL	Adsorbiertem Humanplasma hergestellt.
5183	Routine Control - SA	10 x 1 mL	Adsorbiertem Humanplasma hergestellt.
5482	Routine Coagulation Control Set:		
	Routine Control - N	4 x 1 mL	
	Routine Control - A	3 x 1 mL	
	Routine Control - SA	3 x 1 mL	
Jedes Kit enthält eine Gebrauchsanweisung.			
Jedes Kit enthält chargenspezifischen Referenzwerten.			

Jedes Fläschchen enthält 1 mL gepuffertes, lyophilisiertes Humanplasma.
Vorbereitung: Jedes Fläschchen Kontrollplasma mit 1 mL destilliertem oder entionisiertem Wasser rekonstituieren. Leicht schwenken. Zum vollständigen Auflösen 10 Minuten stehen lassen und vor Gebrauch gut mischen.

ERFORDERLICHE, ABER NICHT MITGELIEFERTE ARTIKEL

Coagulation Control Plasmas kann in Verbindung mit allen entsprechenden kommerziellen Reagenzien bei der Durchführung von Tests an mechanischen oder lichtoptischen Koagulometern verwendet werden.

LAGERUNG, HALTBARKEIT UND STABILITÄT

Ungeöffnete Fläschchen sind unter den auf Verpackung oder Fläschchen angegebenen Lagerbedingungen bis zum aufgedruckten Verfallsdatum stabil. Rekonstituierte Kontrollen sind bei +2 —+8°C 4 Wochen stabil bzw. 4 Wochen bei -20 °C, wenn schockgefroren. Verschlossen aufbewahren.

PROBENENTNAHME UND VORBEREITUNG

Entfällt.

VORGEHENSWEISE

Jede Kontrolle sollte gemäß den Anleitungen der einzelnen Testprotokolle wie unbekannte Probe behandelt werden.

INTERPRETATION DER ERGEBNISSE

Routine Control N sollte für PT, aPTT und Fibrinogen Tests Werte im Normalbereich ergeben. Routine Control A und Routine Control SA wurden standardisiert, um verlängerte bzw. stark verlängerte PT und aPTT Zeiten zu ergeben. Chargen und Geräte spezifische Normalwerte sind in jeder Packung mit Kontrollen enthalten.

EINSCHRÄNKUNGEN

Die mit Coagulation Control Plasmas erzielten Resultate hängen von mehreren Faktoren ab, die stark mit dem Gerät, den verwendeten Reagenzien, mangelnden Substraten und Unterschieden zwischen den Labors in Verbindung stehen[1,2,3]. Jedes Labor sollte daher für jedes Geräte-Reagenzien-System einen eigenen Normalwertebereich erstellen.

QUALITÄTSKONTROLLE

Jedes Labor muss für eine eigene Qualitätskontrolle sorgen. Normale und pathologische Kontrollplasmen müssen vor jeder Testreihe mit Patientenproben getestet werden, um eine zufrieden stellende Gerätleistung und Bedienung zu gewährleisten. Liegen die Kontrollen außerhalb des Normbereichs, sind die Patientenergebnisse nicht zu verwenden.

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 optomechanischen Gerinnungsgerät ermittelt. Jede Labor muss seine eigenen Werte ermitteln.

Reproduzierbarkeit

		Intra-assay-Präzision	
Probe	***n***	***aPTT CV (%)***	***PT CV (%)***
Routine Control N	5	2.83	1.01
Routine Control A	5	2.76	1.71
Routine Control SA	5	1.72	1.03

LITERATURVERZEICHNIS

1. Kirkwood TBL *et al.* (1977) Identification of Sources of Variation in Factor VIII Assay, *British Journal of Haematology,* **37:**559-568.
2. Goldenfarb MD (1971) Reproducibility in Coagulation Assays, *AJCP,* **55:**561-564.
3. Palkuti HA and Longberry JR (1973) A Precision Study of Coagulation Factor Assay Techniques, *AJCP,* **59:**231-235.

Plasmi di controllo della coagulazione
Istruzioni per l'uso

it

SCOPO PREVISTO

Il kit Coagulation Control Plasmas è concepito per l'uso come materiale di controllo qualità.

Routine Control N, Routine Control A e Routine Control SA sono destinati ad essere utilizzati come controlli normali, moderatamente prolungati e marcatamente prolungati per i dosaggi di PT e aPTT. Essi vengono dosati anche per fibrinogeno, TCT e ATIII e sono preparati con plasma umano normale.

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 i relativi simboli precauzionali e di pericolo, laddove pertinente, fare riferimento alla dichiarazione di sicurezza del prodotto. Smaltire i componenti conformemente alle normative locali vigenti.

I prodotti ematici sono stati sottoposti a screening e trovati negativi (salvo diversa indicazione sulla confezione del kit o sulla fiala) per la presenza di:
Antigene dell'epatite B (HbsAg)
Anticorpo HIV 1
Anticorpo HIV 2
Anticorpo HCV
Questi prodotti devono tuttavia essere manipolati con le stesse misure precauzionali adottate per un campione paziente umano.

COMPOSIZIONE

REF	Componente	Contiene	Descrizione
5186	Routine Control - N	10 x 1 mL	Preparato con un pool di plasma normale.
5187	Routine Control - A	10 x 1 mL	Preparati con plasma umano adsorbito.
5183	Routine Control - SA	10 x 1 mL	Preparati con plasma umano adsorbito.
5482	Routine Coagulation Control Set:		
	Routine Control - N	4 x 1 mL	
	Routine Control - A	3 x 1 mL	
	Routine Control - SA	3 x 1 mL	
Ogni kit contiene un Istruzioni per l'uso.			
Ogni kit contiene un inserto recante i valori di riferimento specifici per il lotto.			

Ogni flacone contiene 1 mL di plasma umano tamponato liofilizzato.

Preparazione: Ricostituire ogni flacone di controllo appropriato con 1 mL di acqua distillata o deionizzata. Agitare delicatamente. Attendere 10 minuti per consentire al prodotto di sciogliersi completamente e miscelare bene prima dell'uso.

MATERIALI NECESSARI, MA NON IN DOTAZIONE

Il Coagulation Control Plasmas può essere utilizzato durante l'esecuzione di test su qualsiasi strumento di coagulazione meccanico o foto-ottico in combinazione con tutti i reagenti idonei disponibili in commercio.

CONSERVAZIONE, VITA UTILE E STABILITÀ

Ogni riferimento a nomi e dati utilizzati negli esempi è casuale, se non specificato diversamente. I controlli ricostituiti sono stabili per 8 ore se conservati a $^{+}2$ — $^{+}8$°C oppure 4 settimane a -20°C se congelato molto velocemente. Mantenere i prodotti coperti.

RACCOLTA E PREPARAZIONE DEI CAMPIONI

Non applicabile.

PROCEDURA

Ogni controllo deve essere trattato seguendo la stessa procedura adottata per il campione non noto, conformemente alle istruzioni riportate in ciascun protocollo di test specifico.

INTERPRETAZIONE DEI RISULTATI

Routine Control N deve fornire valori compresi nel range normale di laboratorio per i dosaggi di PT, aPTT e fibrinogeno. Routine Control A e Routine Control SA sono stati standardizzati per fornire, rispettivamente, tempi di PT e aPTT prolungati e marcatamente prolungati. I valori previsti specifici per il lotto e lo strumento vengono forniti con ciascuna confezione di controlli.

LIMITAZIONI

I risultati ottenuti con il Coagulation Control Plasmas dipendono da innumerevoli fattori, strettamente legati alla strumentazione, ai tipi di reagenti, a substrati carenti e alle variazioni dovute ai singoli laboratori[1,2,3]. Ogni laboratorio dovrà definire un range di previsione per il sistema strumento-reagente specificamente utilizzato.

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.

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 opto-meccanico. Ciascun laboratorio dovrà pertanto elaborare i propri dati prestazionali.

Riproducibilità

		Precisione intra-dosaggio	
Campione	***n***	***aPTT CV (%)***	***PT CV (%)***
Routine Control N	5	2.83	1.01
Routine Control A	5	2.76	1.71
Routine Control SA	5	1.72	1.03

BIBLIOGRAFIA

1. Kirkwood TBL *et al.* (1977) Identification of Sources of Variation in Factor VIII Assay, *British Journal of Haematology,* **37:**559-568.
2. Goldenfarb MD (1971) Reproducibility in Coagulation Assays, *AJCP,* **55:**561-564.
3. Palkuti HA and Longberry JR (1973) A Precision Study of Coagulation Factor Assay Techniques, *AJCP,* **59:**231-235.

Plasmas de control de la coagulación
Instrucciones de uso

es

USO PREVISTO

El uso previsto del kit Coagulation Control Plasmas es como material de control de calidad.

Routine Control N, Routine Control A y Routine Control SA se usan como controles normal, moderadamente prolongado y notablemente prolongado para las valoraciones de TP y TTPa. También se valoran para fibrinógeno, TCT y ATIII y se elaboran a partir de plasma humano normal.

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.

La sangre se ha sometido a pruebas que han resultado negativas (a menos que se indique lo contrario en la caja del kit o en el vial) de la presencia de:
Antígeno de la hepatitis B (HbsAg)
Anticuerpos del VIH 1
Anticuerpos del VIH 2
Anticuerpos del VHC
Sin embargo, deben manipularse con las mismas precauciones que una muestra de un paciente.

COMPOSICIÓN

REF	Componente	Contiene	Descripción
5186	Routine Control - N	10 x 1 mL	Elabora a partir de plasma normal de reserva.
5187	Routine Control - A	10 x 1 mL	Elaboran a partir de plasma humano adsorbido.
5183	Routine Control - SA	10 x 1 mL	Elaboran a partir de plasma humano adsorbido.
5482	Routine Coagulation Control Set:		
	Routine Control - N	4 x 1 mL	
	Routine Control - A	3 x 1 mL	
	Routine Control - SA	3 x 1 mL	
Cada kit contiene instrucciones de uso.			
Cada kit contiene valores de referencia específicos insertados del lote.			

Cada vial contiene 1 mL de plasma humano tamponado, liofilizado.

Preparación: Reconstituya cada vial del control adecuado con 1 mL de agua destilada o desionizada. Agite suavemente. Deje que repose durante 10 minutos para que la disolución sea completa y mezcle bien antes de su uso.

ARTÍCULOS NECESARIOS NO SUMINISTRADOS

El Coagulation Control Plasmas puede usarse cuando se realizan pruebas con cualquier instrumento de coagulación mecánica o foto-óptica junto con todos los reactivos adecuados, comerciales.

ALMACENAMIENTO, CADUCIDAD Y ESTABILIDAD

Los viales 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. Los controles reconstituidos son estables durante 8 horas cuando se conservan a $^{+}2$ — $^{+}8$°C o durante 4 semanas a -20°C cuando se conserva con congelación instantánea. Manténgase cubierto.

RECOGIDA Y PREPARACIÓN DE LAS MUESTRAS

No aplicable.

PROCEDIMIENTO

Cada control debe tratarse de la misma forma que la muestra desconocida, de acuerdo con las instrucciones indicadas en cada protocolo de prueba concreto.

INTERPRETACIÓN DE LOS RESULTADOS

Routine Control N debe dar valores dentro del intervalo normal de laboratorio para TP, TTPa y valoraciones de fibrinógeno. El Routine Control A y el Routine Control SA han sido estandarizados para dar tiempos de TP y TTPa prolongados y notablemente prolongados, respectivamente. Se aportan los valores esperados específicos de lote y de instrumento con cada paquete de controles.

LIMITACIONES

Los resultados obtenidos con Coagulation Control Plasmas dependen de varios factores fuertemente asociados a la instrumentación, los tipos de reactivos, sustratos deficientes y variaciones entre laboratorios[1,2,3]. Cada laboratorio debe establecer un intervalo esperado para el sistema instrumento-reactivo concreto.

CONTROL DE CALIDAD

Cada laboratorio debe establecer un programa de control de calidad. Los plasmas de control 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.

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 opto-mecánico. Cada laboratorio debe establecer sus propios datos de rendimiento.

Riproducibilità

		Precisión intra-ensayo	
Muestra	***n***	***TTPa CV (%)***	***TP CV (%)***
Routine Control N	5	2.83	1.01
Routine Control A	5	2.76	1.71
Routine Control SA	5	1.72	1.03

BIBLIOGRAFÍA

1. Kirkwood TBL *et al.* (1977) Identification of Sources of Variation in Factor VIII Assay, *British Journal of Haematology,* **37:**559-568.
2. Goldenfarb MD (1971) Reproducibility in Coagulation Assays, *AJCP,* **55:**561-564.
3. Palkuti HA and Longberry JR (1973) A Precision Study of Coagulation Factor Assay Techniques, *AJCP,* **59:**231-235.

КОНТРОЛЬНЫЕ ПЛАЗМЫ
инструкция

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НАЗНАЧЕНИЕ

Комплект Coagulation Control Plasmas предназначен для использования в качестве материала для контроля качества.

Контрольные плазмы: «Контроль качества, норма», «Контроль качества, высокая патология», «Контроль качества, умеренно выраженная патология» – контроли качества с нормальным, умеренно увеличенным и значительно увеличенным активированным парциальным тромбопластиновым временем (АПТВ/АЧТВ) и протромбиновым временем (ПВ). Их также можно использовать для определения количества фибриногена, тромбинового времени (ТВ) и антитромбина III (АТ-III). Контроли приготовлены из человеческой плазмы практически здоровых людей.

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.

Препараты крови были подвергнуты скринингу и показали отрицательный результат (если на коробке, в которую упакован комплект или на пробирке не указано иное) на:
Антиген к гепатиту B (HbsAg)
Антитела к ВИЧ 1
Антитела к ВИЧ 2
Антитела к вирусу гепатита C (HCV)
Тем не менее с ними следует обращаться, соблюдая те же меры предосторожности, что и при обращении с образцом, полученным от человека.

СОСТАВ

Кат. №	Компоненты	Состав набора	Описание
5186	Контроль качества, норма	10 x 1 мл	приготовлен из пула нормальной плазмы.
5187	Контроль качества, умеренно выраженная патология	10 x 1 мл	приготовлен из адсорбированной плазмы.
5183	Контроль качества, высокая патология	10 x 1 мл	приготовлен из адсорбированной плазмы.
5482	Контроль коагуляции, уровень П1:		
	Контроль качества, норма	4 x 1 мл	
	Контроль качества, умеренно выраженная патология	3 x 1 мл	
	Контроль качества, высокая патология	3 x 1 мл	
Каждый набор содержит инструкцию по применению.			
Паспорт с референсными значениями (допустимых/контрольных пределов).			

Каждый флакон содержит 1.0 мл лиофилизированной плазмы человека.

Подготовка: Разведите соответствующую контрольную плазму добавлением во флакон 1.0 мл дистиллированной или деионизированной воды. Осторожно перемешайте и оставьте при комнатной температуре в течение 10 минут. Перед использованием флакон с разведенной плазмой переворачивайте (без встряхивания).

НЕОБХОДИМЫЕ КОМПОНЕНТЫ, НЕ ВКЛЮЧЕННЫЕ В КОМПЛЕКТ ПОСТАВКИ

Контрольные плазмы могут быть использованы с анализаторами, имеющими различный метод детекции (механический, оптический и т.д.) в сочетании с реагентами различных производителей.

ХРАНЕНИЕ, СРОК ГОДНОСТИ И УСТОЙЧИВОСТЬ

Невскрытые флаконы с лиофилизированной плазмой хранятся до истечения срока годности в условиях, указанных на этикетке. Разведенная контрольная плазма в закрытом флаконе может храниться при $^{+}2$ — $^{+}8$°C или 4 недель при -20°C в случае мгновенной заморозки. в течение 8 часов.

ОТБОР И ПОДГОТОВКА ОБРАЗЦОВ

Не относится.

ПРОЦЕДУРА

Каждый образец контрольной плазмы должен анализироваться так же, как образец плазмы больного, в соответствии с инструкциями к используемому реагенту и прибору.

ИНТЕРПРЕТАЦИЯ РЕЗУЛЬТАТОВ

«Контроль качества, норма», должен показывать значения в пределах нормального диапазона используемого в лаборатории для ПВ, АПТВ и определения концентрации фибриногена. «Контроль качества, умеренно выраженная патология» и «Контроль качества, высокая патология», были стандартизированы, таким образом, чтобы показывать соответственно умеренно или выраженное увеличение АПТВ и ПВ. Номер партии и допустимые/контрольные пределы для различных коагулометров поставляются с каждым набором контролей.

ОГРАНИЧЕНИЯ

Референсные значения могут варьировать между лабораториями в зависимости от используемых реагентов, методов, коагулометров и других факторов[1,2,3]. По этой причине каждая лаборатория должна установить свои собственные нормативные параметры метода.

КОНТРОЛЬ КАЧЕСТВА

Каждая лаборатория должна установить программу контроля качества. Перед измерением каждой партии образцов пациентов необходимо протестировать нормальную и патологическую плазму, чтобы удостовериться в удовлетворительной работе оборудования и оператора. Если контрольные измерения не совпадают с ожидаемыми значениями, то измеренные данные пациентов следует считать недостоверными.

НОРМАЛЬНЫЕ ПОКАЗАТЕЛИ

Референсные значения могут варьировать между лабораториями в зависимости от используемых методов и коагулометров. По этой причине каждая лаборатория должна установить свои собственные значения.

ЭКСПЛУАТАЦИОННЫЕ ХАРАКТЕРИСТИКИ

Компания Хелена или её дистрибьюторы определили следующие ориентировочные аналитические характеристики. Каждая лаборатория должна определить свои собственные аналитические характеристики.
При использовании оптико-механического коагулометра и реагентов Хелена были определены следующие коэффициенты вариации (CV):

Воспроизводимость

		в пределах аналитической серии	
Контрольная плазма	***Кол-во образцов***	***CV (%) АПТВ***	**CV (%) ПВ**
Контроль качества, норма	5	2.83	1.01
Контроль качества, умеренно выраженная патология	5	2.76	1.71
Контроль качества, высокая патология	5	1.72	1.03

ЛИТЕРАТУРА

1. Kirkwood TBL *et al.* (1977) Identification of Sources of Variation in Factor VIII Assay, *British Journal of Haematology,* **37:**559-568.
2. Goldenfarb MD (1971) Reproducibility in Coagulation Assays, *AJCP,* **55:**561-564.
3. Palkuti HA and Longberry JR (1973) A Precision Study of Coagulation Factor Assay Techniques, *AJCP,* **59:**231-235.

LORNE LABORATORIES LTD.

MAREA BRITANIE

CE 1434

REACTIVI MONOCLONALI PENTRU DETERMINAREA GRUPEI SANGUINE

INSTRUCŢIUNI DE UTILIZARE

Anti-A, Anti-B şi Anti-A,B monoclonal: Pentru tehnicile cu eprubetă, ID Bio-Rad, Ortho BioVue, cu microplăci şi cu lamă.

REZUMAT

În 1900, Landsteiner a descoperit că serul unor persoane poate aglutina globulele roşii ale altora. În prezent sunt recunoscute patru fenotipuri obişnuite: O, A, B şi AB. De atunci au fost identificate şi subgrupele A şi B.

Grup metodă directă			Grup metodă inversă				ABO Fenotip	Caucazieni %[1]
A	B	A,B	A_1	A_2	B	O		
+	0	+	0	0	+	0	**A**	43
0	+	+	+	+	0	0	**B**	9
0	0	0	+	+	+	0	**O**	44
+	+	+	0	0	0	0	**AB**	4

SCOPUL PROPUS

Reactivii ABO sunt reactivi pentru determinarea grupei sanguine destinaţi a fi folosiţi pentru a determina calitativ prezenţa sau absenţa antigenelor A şi/sau B pe globulele roşii ale donatorilor de sânge sau ale pacienţilor care au nevoie de o transfuzie sanguină în cazul testării conform tehnicilor recomandate şi prezentate în aceste instrucţiuni de utilizare.

PRINCIPIUL

Reactivii conţin anticorpi împotriva antigenului A şi/sau B corespunzător de pe globulele roşii umane şi vor provoca o aglutinare (aglomerare) directă a globulelor roşii purtătoare ale antigenului ABO corespunzător. Neaglutinarea indică în general absenţa antigenului ABO corespunzător pe globulele roşii umane (consultaţi **Limitări**).

REACTIVI

Reactivii monoclonali Lorne IgM pentru determinarea grupei sanguine ABO conţin anticorpi monoclonali de şoarece diluaţi într-un tampon fosfat care conţine clorură de sodiu, EDTA şi albumină bovină. Reactivii nu conţin sau nu sunt compuşi din substanţe CMR, substanţe perturbatoare pentru sistemul endocrin sau care ar putea provoca sensibilizare sau o reacţie alergică în cazul utilizatorului. Fiecare reactiv este furnizat la diluarea optimă pentru utilizare cu toate tehnicile recomandate prezentate mai jos, fără să mai fie necesară diluarea sau adăugarea suplimentară. Pentru numărul de referinţă al lotului şi data de expirare, consultaţi **Eticheta flaconului**.

Produs	Linie celulară/Clonă	Culoare	Colorant utilizat
Anti-A	9113D10	Albastru	Albastru patent
Anti-B	9621A8	Galben	Tartrazină
Anti-A,B	152D12 + 9113D10 + ES15	Incolor	Niciunul

DEPOZITARE

Flacoanele cu reactiv trebuie depozitate la temperaturi cuprinse între 2 şi 8 ºC după primire. Depozitarea prelungită la temperaturi în afara acestui interval poate duce la pierderea accelerată a reactivităţii reactivilor. Acest reactiv a fost supus unor studii de stabilitate la transport la 37 ^{o}C şi –25 ^{o}C, conform precizărilor din documentul BS EN ISO 23640:2015.

RECOLTAREA ŞI PREGĂTIREA PROBEI

Probele de sânge pot fi recoltate în EDTA, citrat, anticoagulanţi CPDA sau ca probă coagulată. Probele trebuie testate cât mai curând posibil după recoltare. Dacă survine o întârziere în ce priveşte testarea, păstraţi probele la 2-8 ºC. Probele care prezintă o hemoliză intensă sau o contaminare microbiană nu trebuie utilizate pentru testare. Probele de sânge care prezintă semne de liză pot conduce la rezultate neconcludente. Este de preferat (dar nu esenţial) să spălaţi toate probele de sânge cu PBS sau soluţie salină izotonă înainte de testare.

PRECAUŢII

1. Reactivii sunt destinaţi exclusiv diagnosticului *in vitro*.
2. Dacă un flacon cu reactiv este crăpat sau curge, aruncaţi conţinutul imediat.
3. Nu folosiţi reactivii după data de expirare (consultaţi **Eticheta flaconului**).
4. Nu folosiţi reactivii dacă observaţi că s-a format un precipitat.
5. Purtaţi echipament de protecţie când manipulaţi reactivii, cum ar fi mănuşi de unică folosinţă şi un halat de laborator.
6. Reactivii au fost filtraţi printr-o membrană de 0,2 µm pentru a reduce încărcătura biologică, dar nu sunt livraţi sterili. După deschiderea flaconului, reactivul poate fi folosit până la data de expirare dacă nu se observă o turbiditate marcată, care ar putea indica deteriorarea sau contaminarea reactivului.
7. Reactivii conţin < 0,1% azidă de sodiu. Azida de sodiu poate fi toxică dacă este ingerată şi poate reacţiona cu conductele din plumb sau cupru formând azide metalice explozive. La eliminare, spălaţi cu cantităţi mari de apă.
8. Nu se cunosc teste care să garanteze faptul că produsele derivate din surse umane sau animale nu prezintă agenţi infecţioşi. Fiţi atenţi când utilizaţi şi când eliminaţi un flacon şi conţinutul acestuia.

ELIMINAREA REACTIVULUI ŞI CUM SE ACŢIONEAZĂ ÎN CAZ DE STROPIRE

Pentru informaţii privind eliminarea reactivului şi metodele de decontaminare a unui loc în caz de stropire, consultaţi **Fişele cu date de securitate ale materialului**, disponibile la cerere.

1. MARTORI ŞI RECOMANDĂRI

1. Se recomandă testarea în paralel a unui martor pozitiv şi a unui martor negativ cu fiecare lot de teste. Testele trebuie considerate nevalide dacă probele martor nu prezintă rezultatele prevăzute.
2. Întrucât aceşti reactivi nu conţin potenţiatori macromoleculari, este foarte puţin probabil să fie cauzate reacţii fals pozitive la globulele acoperite cu IgG.
3. Specimenele de sânge din subgrupele slabe A sau B (de ex., Ax) pot genera reacţii fals negative sau slabe în cazul testării cu lame, plăci de microtitru sau cartele cu gel. Se recomandă retestarea subgrupelor slabe cu ajutorul tehnicii cu eprubetă.
4. În cazul pacienţilor cu vârsta mai mare de şase luni, rezultatele determinării grupei ABO trebuie confirmate prin testarea serului sau plasmei acestora în raport cu globulele din grupa A_1 şi B cunoscută înainte de a confirma în cazul lor grupa sanguină ABO.
5. Înainte de utilizare, lăsaţi reactivul să ajungă la temperatura camerei. Imediat după utilizare, depozitaţi reactivul înapoi la o temperatură cuprinsă între 2 şi 8 ^{o}C.
6. În **Tehnici recomandate,** un volum reprezintă aproximativ 50 µl cu pipeta flaconului furnizată.
7. Utilizarea reactivilor şi interpretarea rezultatelor trebuie efectuate de personal calificat şi instruit în mod corespunzător în conformitate cu cerinţele ţării în care se utilizează reactivii.
8. Utilizatorul trebuie să stabilească în ce măsură se pot utiliza reactivii în alte tehnici.

REACTIVI ŞI MATERIALE NECESARE

- Pipete volumetrice.
- Cartele ID Bio-Rad (NaCl, test enzimatic şi aglutinine la rece).
- Centrifugă ID Bio-Rad.
- ID-CellStab sau ID-Diluent 2 Bio-Rad.
- Casete sistem Ortho BioVue (neutre).
- Centrifugă sistem Ortho BioVue.
- Diluant globule roşii 0,8% Ortho
- Lame de sticlă pentru microscopie sau plăci de cartelă albe.
- Beţişoare aplicatoare.
- Eprubete de sticlă (10 x 75 mm sau 12 x 75 mm).
- Centrifugă pentru eprubete.
- Microplăci cu godeuri în formă de U validate.
- Centrifugă pentru microplăci.
- Agitator pentru plăci.
- Soluţie PBS (pH 6,8–7,2) sau soluţie salină izotonă (pH 6,5–7,5).
- Globule roşii martor pozitiv şi negativ:
  Anti-A: grupa A (martor pozitiv) şi grupa O (martor negativ).
  Anti-B: grupa B (martor pozitiv) şi grupa O (martor negativ).
  Anti-A,B: grupa A şi grupa B (martori pozitivi) şi grupa O (martor negativ).

TEHNICI RECOMANDATE

A. Tehnica cu eprubetă

1. Pregătiţi o suspensie de 2-3% din globulele roşii în PBS sau soluţie salină izotonă.
2. Puneţi într-o eprubetă etichetată: 1 volum de reactiv Anti-ABO Lorne şi 1 volum de suspensie de globule roşii.
3. Amestecaţi bine şi incubaţi la temperatura camerei timp de 1 minut.
4. Centrifugaţi toate eprubetele timp de 10 secunde la 1000 rcf sau la un alt raport adecvat între timp şi forţă.
5. Resuspendaţi uşor butonul de hematii şi efectuaţi citirea macroscopică pentru aglutinare
6. Eprubetele care prezintă un rezultat negativ sau discutabil trebuie incubate timp de 15 minute la temperatura camerei.
7. După incubare, repetaţi paşii 4 şi 5.

B. Tehnica ID Bio-Rad (cartele NaCl, test enzimatic şi aglutinine la rece)

1. Pregătiţi o suspensie de 0,8% din globulele roşii în ID-CellStab sau ID-Diluent 2.
2. Îndepărtaţi folia de aluminiu de pe mai multe microeprubete, după cum este necesar.
3. Puneţi în microeprubeta corespunzătoare: 50 µl de suspensie de globule roşii şi 25 µl de reactiv Anti-ABO Lorne.
4. Centrifugaţi cartela(ele) ID în centrifuga pentru cartele cu gel Bio-Rad.
5. Efectuaţi citirea macroscopică pentru aglutinare.

C. Tehnica Ortho BioVue (Casete neutre)

1. Pregătiţi o suspensie de 0,8% din globulele roşii în Diluant de globule roşii Ortho 0,8%.
2. Îndepărtaţi folia de aluminiu de pe mai multe camere de reacţie, după cum este necesar.
3. Puneţi în camera de reacţie corespunzătoare: 50 µl de suspensie de globule roşii şi 40 µl de reactiv Anti-ABO Lorne.
4. Centrifugaţi caseta(ele) într-o centrifugă de sistem Ortho BioVue.
5. Efectuaţi citirea macroscopică pentru aglutinare.

D. Tehnica cu microplăci, care utilizează godeuri în formă de U

1. Pregătiţi o suspensie de 2-3% din globulele roşii în PBS sau soluţie salină izotonă.
2. Puneţi într-un godeu corespunzător: 1 volum de reactiv Anti-ABO Lorne şi 1 volum de suspensie de globule roşii.
3. Amestecaţi temeinic, de preferinţă cu un agitator pentru microplăci, având grijă să evitaţi contaminarea încrucişată între godeuri.
4. Incubaţi la temperatura camerei timp de 15 minute (timpul depinde de utilizator).
5. Centrifugaţi microplaca timp de 1 minut la 140 rcf sau la un alt raport adecvat între timp şi forţă.
6. Resuspendaţi butonul celular cu o agitaţie atent controlată într-un agitator de microplăci
7. Efectuaţi citirea macroscopică sau cu un cititor automat validat.
8. Orice reacţie slabă trebuie reconfirmată prin tehnica cu eprubetă.

E. Tehnica cu lamă

1. Pregătiţi o suspensie de 35-45% din globulele roşii în ser, plasmă, PBS sau soluţie salină izotonă sau utilizaţi sânge integral anti-coagulat (în plasmă proprie).
2. Puneţi pe o lamă de sticlă sau o placă de cartelă etichetată: 1 volum de reactiv Anti-ABO Lorne şi 1 volum de suspensie de globule roşii.
3. Folosind un beţişor aplicator curat, amestecaţi reactivul şi celulele pe o suprafaţă de circa 20 x 40 mm.
4. Înclinaţi încet lama înainte şi înapoi timp de 30 de secunde, amestecând ocazional şi mai mult în intervalul de 1 minut, păstrând lama la temperatura camerei.
5. Efectuaţi citirea macroscopică după 1 minut la lumină difuză şi nu confundaţi firele de fibrină cu aglutinarea.
6. Orice reacţie slabă trebuie reconfirmată prin tehnica cu eprubetă.

INTERPRETAREA REZULTATELOR TESTULUI

1. **Pozitiv:** Aglutinarea globulelor roşii constituie un rezultat pozitiv şi, în limitele acceptate ale procedurii de testare, indică prezenţa antigenului ABO corespunzător pe globulele roşii.
2. **Negativ:** Neaglutinarea globulelor roşii constituie un rezultat negativ şi, în limitele acceptate ale procedurii de testare, indică absenţa antigenului ABO corespunzător pe globulele roşii.
3. **Discrepanţe:** Dacă rezultatele obţinute cu grupul cu metoda inversă nu corespund cu grupul cu metoda directă, sunt necesare investigaţii suplimentare.

STABILITATEA REACŢIILOR

1. Efectuaţi citirea testelor cu eprubetă şi microplacă imediat după centrifugare.
2. Testele cu lamă ar trebui interpretate după maximum un minut pentru a garanta specificitatea şi a evita riscul de a interpreta incorect un rezultat negativ ca fiind pozitiv din cauza uscării reactivului.
3. Aveţi grijă la interpretarea rezultatelor testelor efectuate la alte temperaturi decât cele recomandate.

LIMITĂRI

1. Întrucât antigenele ABO nu sunt pe deplin dezvoltate la naştere, pot apărea reacţii mai slabe la specimenele de la nivelul cordonului ombilical şi neonatale.
2. Atunci când se utilizează Anti-A,B monoclonal, specimenele de sânge din subgrupele slabe A sau B (de ex., Ax) pot genera reacţii fals negative sau slabe în cazul testării cu lame, plăci de microtitru sau cartele cu gel. Se recomandă retestarea subgrupelor slabe cu ajutorul tehnicii cu eprubetă.
3. Întrucât Anti-A monoclonal şi Anti-B monoclonal Lorne nu sunt validaţi pentru a depista antigene Ax şi A3, respectiv Bx şi B3, nu susţinem reactivitatea reactivului monoclonal Anti-A sau Anti-B împotriva acestor subgrupe A şi B slabe.
4. Sângele stocat poate genera reacţii mai slabe decât sângele proaspăt.
5. Rezultatele fals pozitive sau fals negative pot fi generate şi de:
   - Contaminarea materialelor folosite în testare
   - Depozitarea, concentraţia celulară, timpul sau temperatura de incubaţie necorespunzătoare
   - Centrifugarea necorespunzătoare sau excesivă
   - Abaterea de la tehnicile recomandate
   - Probele de la nivelul cordonului ombilical contaminate cu gelatina Wharton

CARACTERISTICI DE PERFORMANŢĂ SPECIFICE

1. Înainte de a fi pus pe piaţă, fiecare lot de reactiv monoclonal ABO Lorne a fost testat conform metodelor de testare recomandate şi enumerate în aceste instrucţiuni de utilizare. Testele corespund cerinţelor de testare prezentate în numărul/versiunea curentă a „Guidelines for the Blood Transfusion Services in the United Kingdom"[3] (Orientări pentru Serviciile de transfuzii sanguine din Regatul Unit) şi „Common Technical Specifications" (Specificaţii tehnice comune).
2. Specificitatea anticorpilor monoclonali este demonstrată cu ajutorul unui panou de celule cu antigen negativ.
3. Forţa reactivilor a fost testată în raport cu standardele de referinţă privind forţa minimă obţinute de la Institutul Naţional de Standarde Biologice şi Control (NIBSC):
   - Standard de referinţă Anti-A 03/188 **şi / sau**
   - Standard de referinţă Anti-B 03/164
4. Anti-B Lorne nu reacţionează cu globulele roşii „B dobândit".
5. Reactivii monoclonali ABO Lorne nu detectează criptoantigene, cum ar fi T, Tn sau Cad.
6. Controlul calităţii reactivilor a fost efectuat cu globule roşii cu fenotipuri care au fost verificate de un centru pentru transfuzii sanguine din Regatul Unit şi care au fost spălate cu PBS sau soluţie salină izotonă înainte de utilizare.

DECLINAREA RESPONSABILITĂŢII

1. Utilizatorul este singurul responsabil pentru performanţa reactivilor în cazul utilizării altor metode decât cele menţionate în **Tehnici recomandate**.
2. Orice abatere de la **Tehnicile recomandate** trebuie validată înainte de utilizare[5].

BIBLIOGRAFIE

1. Marion E.Reid & Christine Lomas-Francis, Blood Group Antigens & Antibodies, SBB Books, New York 2007; pagina 181.
2. Issitt PD. Applied Blood Group Serology, 3rd Edition. Montgomery Scientific, Miami 1985; capitolul 6.
3. Guidelines for the Blood Transfusion Service in the United Kingdom, 6th Edition 2002. The Stationary Office.
4. AABB Technical Manual, 16th edition, AABB 2008.
5. British Committee for Standards in Haematology, Blood Transfusion Task Force. Recommendations for evaluation, validation and implementation of new techniques for blood grouping, antibody screening and cross matching. Transfusion Medicine, 1995, **5**, 145-150.

DIMENSIUNI REACTIV DISPONIBILE

	Mărime flacon	Număr de catalog	Teste per flacon
Anti-A monoclonal	10 ml	600010	200
	1000 ml	600000*	20.000
	5000 ml	600000X5*	100.000
Anti-B monoclonal	10 ml	610010	200
	1000 ml	610000*	20.000
	5000 ml	610000X5*	100.000
Anti-A,B monoclonal	10 ml	620010	200
	1000 ml	620000*	20.000
	5000 ml	620000X5*	100.000

***Această mărime este valabilă numai pentru utilizare de fabricaţie suplimentară (FFMU) şi, prin urmare, nu are marcajul CE.**

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MONOCLONAL BLOOD GROUPING REAGENTS.

LORNE LABORATORIES

CE 1434

DIRECTIONS FOR USE

Anti-A, Anti-B and Anti-A,B Monoclonal:

For Tube, Bio-Rad-ID, Ortho BioVue, Microplate and Slide Techniques.

SUMMARY

In 1900, Landsteiner discovered the serum of some people would agglutinate the red cells of others. Four common phenotypes are now recognised: O, A, B and AB. Subgroups of A and B have since been identified.

Forward Group			Reverse Group				ABO	Caucasians
A	B	A,B	A_1	A_2	B	O	Phenotype	%[1]
+	0	+	0	0	+	0	A	43
0	+	+	+	+	0	0	B	9
0	0	0	+	+	+	0	O	44
+	+	+	0	0	0	0	AB	4

INTENDED PURPOSE

The ABO reagents are blood grouping reagents intended to be used to qualitatively determine the presence or absence of the A and or B antigens on the red cells of blood donors or patients requiring a blood transfusion when tested in accordance with the recommended techniques stated in this IFU.

PRINCIPLE

The reagents contain antibodies against the appropriate A and/or B antigen on human red cells and will cause direct agglutination (clumping) of red cells that carry the corresponding ABO antigen. No agglutination generally indicates the absence of the corresponding ABO antigen on human red cells (see **Limitations**).

REAGENT

Lorne Monoclonal IgM ABO blood grouping reagents contain mouse monoclonal antibodies diluted in a phosphate buffer containing sodium chloride, EDTA and bovine albumin. The reagents do not contain or consist of CMR substances, or endocrine disrupting substances or that could result in sensitisation or an allergic reaction by the user. Each reagent is supplied at optimal dilution for use with all the recommended techniques stated below without the need for further dilution or addition. For lot reference number and expiry date see Vial Label.

Product	Cell Line/Clone	Colour	Dye Used
Anti-A	9113D10	Blue	Patent Blue
Anti-B	9621A8	Yellow	Tartrazine
Anti-A,B	152D12 + 9113D10 + ES15	Colourless	None

STORAGE

Reagent vials should be stored at 2 - 8ºC on receipt. Prolonged storage at temperatures outside this range may result in accelerated loss of reagent reactivity. This reagent has undergone transportation stability studies at 37ºC and –25ºC as described in document BS EN ISO 23640:2015.

SAMPLE COLLECTION AND PREPARATION

Blood samples can be collected into EDTA, citrate, CPDA anticoagulants or as a clotted sample. The samples should be tested as soon as possible following collection. If a delay in testing should occur, store the samples at 2-8°C. Samples displaying gross haemolysis or microbial contamination should not be used for testing. Blood samples showing evidence of lysis may give unreliable results. It is preferable (but not essential) to wash all blood samples with PBS or Isotonic saline before being tested.

PRECAUTIONS

1. The reagents are intended for in vitro diagnostic use only.
2. If a reagent vial is cracked or leaking, discard the contents immediately.
3. Do not use the reagents past the expiration date (see Vial Label).
4. Do not use the reagents if a precipitate is present.
5. Protective clothing should be worn when handling the reagents, such as disposable gloves and a laboratory coat.
6. The reagents have been filtered through a 0.2 μm capsule to reduce the bio-burden, but are not supplied sterile. Once a vial has been opened the contents should remain viable up until the expiry date as long as there is no marked turbidity, which can indicate reagent deterioration or contamination.
7. The reagents contain < 0.1% sodium azide. Sodium azide may be toxic if ingested and may react with lead and copper plumbing to form explosive metal azides. On disposal flush away with large volumes of water.
8. No known tests can guarantee that products derived from human or animal sources are free from infectious agents. Care must be taken in the use and disposal of each vial and its contents.

DISPOSAL OF REAGENT AND DEALING WITH SPILLAGES

For information on disposal of the reagent and decontamination of a spillage site see Material Safety Data Sheets, available on request.

CONTROLS AND ADVICE

1. It is recommended a positive control and a negative control be tested in parallel with each batch of tests. Tests must be considered invalid if controls do not show expected results.
2. Since these reagents do not contain macromolecular potentiators, it is very unlikely that false positive reactions are caused with IgG coated cells.
3. Blood specimens of weak A or B subgroups (e.g Ax) may give rise to false negative or weak reactions when tested using slides, microtitre plates or gel cards. It is advisable to re-test weak subgroups using tube technique.
4. Individuals older than six months should have their ABO blood-grouping results confirmed by testing their serum or plasma against known group A_1 and B cells before their ABO blood group can be confirmed.
5. Before use, let the reagent warm up to room temperature. As soon as the reagent has been used, put the reagent back in storage at 2-8°C.
6. In the Recommended Techniques one volume is approximately 50μl when using the vial dropper provided.
7. The use of the reagents and the interpretation of results must be carried out by properly trained and qualified personnel in accordance with the requirements of the country where the reagents are in use.
8. The user must determine the suitability of the reagents for use in other techniques.

REAGENTS AND MATERIALS REQUIRED

- Applicator sticks.
- Automatic plate reader.
- Bio-Rad ID-Cards (NaCl, enzyme test and cold agglutinins).
- Bio-Rad ID-Centrifuge.
- Bio-Rad ID-CellStab or ID-Diluent 2.
- Glass microscope slides or white card tiles.
- Glass test tubes (10 x 75 mm or 12 x 75 mm).
- Microplate centrifuge.
- Ortho BioVue System Cassettes (Neutral).
- Ortho BioVue System Centrifuge.
- Ortho 0.8% Red Cell Diluent.
- Plate shaker.
- PBS solution (pH 6.8–7.2) or Isotonic saline solution (pH 6.5–7.5).
- Positive and negative control red cells:
  Anti-A: group A (positive control) and group O (negative control).
  Anti-B: group B (positive control) and group O (negative control).
  Anti-A,B: group A and group B (positive controls) and group O (negative control).
- Test tube centrifuge.
- Validated "U" well microplates.
- Volumetric pipettes.

RECOMMENDED TECHNIQUES

A. Tube Technique

1. Prepare a 2-3% suspension of red cells in PBS or Isotonic saline.
2. Place in a labelled test tube: 1 volume of Lorne Anti-ABO reagent and 1 volume of red cell suspension.
3. Mix thoroughly and incubate at room temperature for 1 minute.
4. Centrifuge all tubes for 10 seconds at 1000 rcf or for a suitable alternative time and force.
5. Gently resuspend red cell button and read macroscopically for agglutination
6. Any tubes, which show a negative or questionable result, should be incubated for 15 minutes at room temperature.
7. Following incubation, repeat steps 4 and 5.

B. Bio-Rad-ID Technique (NaCl, enzyme test and cold aglutinins cards)

1. Prepare a 0.8% suspension of red cells in ID-CellStab or ID-Diluent 2.
2. Remove aluminium foil from as many microtubes as needed.
3. Place in appropriate microtube: 50μl of red cell suspension and 25μl of Lorne Anti-ABO reagent.
4. Centrifuge ID-Card(s) in the Bio-Rad gel card centrifuge.
5. Read macroscopically for agglutination.

C. Ortho BioVue Technique (Neutral cassettes)

1. Prepare a 0.8% suspension of red cells in 0.8% Ortho Red Cell Diluent.
2. Remove aluminium foil from as many reaction chambers as needed.
3. Place in appropriate reaction chamber: 50μl of red cell suspension and 40μl of Lorne Anti-ABO reagent.
4. Centrifuge cassette(s) in an Ortho BioVue System Centrifuge.
5. Read macroscopically for agglutination.

D. Microplate Technique, using "U" wells

1. Prepare a 2-3% suspension of red cells in PBS or Isotonic saline.
2. Place in the appropriate well: 1 volume Lorne Anti-ABO reagent and 1 volume red cell suspension.
3. Mix thoroughly, preferably using a microplate shaker, taking care to avoid cross-well contamination.
4. Incubate at room temperature for 15 minutes (time dependant on user).
5. Centrifuge the microplate for 1 minute at 140 rcf or for a suitable alternative time and force.
6. Resuspend the cell buttons using carefully controlled agitation on a microplate shaker

7. Read macroscopically or with a validated automatic reader.
8. Any weak reactions should be repeated by the tube technique.

E. Slide Technique
1. Prepare a 35-45% suspension of red cells in serum, plasma or PBS or Isotonic saline or use anti-coagulated whole blood (in its own plasma).
2. Place on a labelled glass slide or card tile: 1 volume of Lorne Anti-ABO reagent and 1 volume of red cell suspension.
3. Using a clean applicator stick, mix reagent and cells over an area of about 20 x 40 mm.
4. Slowly tilt the slide back and forth for 30 seconds, with occasional further mixing during the 1-minute period, maintaining slide at room temperature.
5. Read macroscopically after 1 minute over a diffuse light and do not mistake fibrin strands as agglutination.
6. Any weak reactions should be repeated by the tube technique.

INTERPRETATION OF TEST RESULTS
1. Positive: Agglutination of the red cells constitutes a positive test result and within accepted limitations of test procedure, indicates the presence of the appropriate ABO antigen on the red cells.
2. Negative: No agglutination of the red cells constitutes a negative result and within the accepted limitations of the test procedure, indicates the absence of the appropriate ABO antigen on the red cells.
3. Discrepancies: If the results obtained with reverse group don't correlate with forward group, further investigation is required.

STABILITY OF THE REACTIONS
1. Read all tube and microplate tests immediately after centrifugation.
2. Slide tests should be interpreted after a maximum of one minute to ensure specificity and to avoid the possibility a negative result may be incorrectly interpreted as positive due to drying of the reagent.
3. Caution should be exercised in the interpretation of results of tests performed at temperatures other than those recommended.

LIMITATIONS
1. ABO antigens are not fully developed at birth and so weaker reactions may therefore occur with cord or neonatal specimens.
2. When using Monoclonal Anti-A,B, blood specimens of weak A or B subgroups (e.g Ax) may give rise to false negative or weak reactions when tested using slides, microtitre plates or gel cards. It is advisable to re-test weak subgroups using the tube technique.
3. Lorne monoclonal Anti-A and monoclonal Anti-B are not validated to detect Ax and A3 or Bx and B3 antigens resp and we therefore do not claim reactivity of the monoclonal Anti-A or Anti-B reagent against these weak A and B sub-groups.
4. Stored blood may give weaker reactions than fresh blood.
5. False positive or false negative results may also occur due to:
   - Contamination of test materials
   - Improper storage, cell concentration, incubation time or temperature
   - Improper or excessive centrifugation
   - Deviation from the recommended techniques
   - Cord samples contaminated with Wharton's jelly

SPECIFIC PERFORMANCE CHARACTERISTICS
1. Prior to release, each lot of Lorne ABO monoclonal reagent was tested using the recommended test methods listed in this IFU. The tests complied with the test requirements as stated in the current version/issue of the 'Guidelines for the Blood Transfusion Services in the United Kingdom' and the 'Common Technical Specifications'.
2. Specificity of source monoclonal antibodies is demonstrated using a panel of antigen-negative cells.
3. The potency of the reagents has been tested against the following minimum potency reference standards obtained from National Institute of Biological Standards and Controls (NIBSC): Anti-A reference standard 03/188 And / Or Anti-B reference standard 03/164
4. Lorne Anti-B does not react with "Acquired-B" red cells.
5. Lorne Monoclonal ABO reagents do not detect crypt antigens such as T, Tn or Cad.
6. The Quality Control of the reagents was performed using red cells with phenotypes that were verified by a UK blood transfusion centre and had been washed with PBS or Isotonic saline prior to use.

DISCLAIMER
1. The user is responsible for the performance of the reagents by any method other than those mentioned in the Recommended Techniques.
2. Any deviations from the Recommended Techniques should be validated prior to use[8].

BIBLIOGRAPHY

1. Marion E. Reid and Christine Lomas-Francis, Blood Group Antigens and Antibodies, SBB Books, New York 2007; Page 181.
2. Issitt PD. Applied Blood Group Serology, 3rd Edition. Montgomery Scientific, Miami 1985; Chapter 6
3. Guidelines for the Blood Transfusion Service in the United Kingdom 6th Edition 2002. The Stationery Office.
4. AABB Technical Manual, 16th Edition, AABB 2008.
5. British Committee for Standards in Haematology, Blood Transfusion Task Force. Recommendations for evaluation, validation and implementation of new techniques for blood grouping, antibody screening and cross matching. Transfusion Medicine, 1995, 5, 145-150.

AVAILABLE REAGENT SIZES

	Vial Size	Catalogue Number	Tests Per Vial
Anti-A Monoclonal	10 ml	600010	200
	1000 ml	600000*	20,000
	5000 ml	600000X5*	100,000
Anti-B Monoclonal	10 ml	610010	200
	1000 ml	610000*	20,000
	5000 ml	610000X5*	100,000
Anti-A,B Monoclonal	10 ml	620010	200
	1000 ml	620000*	20,000
	5000 ml	620000X5*	100,000

*This size is For Further Manufacturing Use (FFMU) only and is therefore not CE marked.

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REAGENȚII DE GROUP MONOCLONAL.

INSTRUCȚIUNILE DE UTILIZARE

Anti-D Clone 1 și Clone 2 Monoclonal: pentru tub, DiaMed-ID, Ortho BioVue, tehnici de microplaci și diapozitive.

REZUMAT

Sistemul Rh de grup sanguin a fost descoperit în 1940. Antigenul D este cel mai mult clinic semnificativ non-ABO de celule roșii de sânge și a fost implicat în provocând reacții hemolitice de transfuzie și boală hemolitică a nou-născutului.

Anti -D	Fenotip	Caucasieni %	Afro -Americani %
+	Rh D +ve	85	72
0	Rh D -ve	15	28

PRINCIPIU

Reactivii vor cauza aglutinarea directă (clumping) a celulelor roșii test care poartă antigenul D. Nici o aglutinare nu indică în general absența antigenului D (vezi Limitări).

REACTIV

Lorne monoclonal IgM Anti-D Clone 1 și Clone 2 reactivi de grupare sanguină sunt reactivi cu proteine scăzute care conțin un anticorp IgM monoclonal uman diluat cu clorură de sodiu (0,9 g%), albumină bovină (3 g%) și potențiatori macromoleculați. La introducerea eșantioanelor pacientului, fiecare reactiv va aglutina direct celulele Rh pozitive, inclusiv majoritatea variantelor (dar nu și DVI) și o proporție mare de fenotipuri D (Du) slabe atunci când se utilizează tehnicile recomandate. Fiecare reactiv este furnizat la o diluție optimă pentru utilizarea pe eșantioanele pacientului cu toate tehnicile recomandate menționate mai jos, fără a mai fi necesară o continuare diluare sau adăugare. Pentru numărul de referință al lotului și data de expirare, consultați Eticheta flaconului.

Produs	***Linie celulară / clonă***
Anti –D Clone 1	RUM-1
Anti –D Clone 2	MS-201

EXPUNEREA FAȚĂ A ANTIGENULUI RhD

Termenul colectiv Du este utilizat pe scară largă pentru a descrie celulele roșii care au o exprimare mai slabă a antigenului D decât în mod normal. Termenul D slab indică indivizii cu un număr redus de situsuri antigenice complete D pe celula roșie. Termenul parțial D denotă indivizi cu epitop de antigen D lipsă. Celulele Dvı sunt o categorie D parțială, care nu are cele mai multe epitopi D. Ambii reactivi ai clonei 1 și clonei 2 vor detecta cele mai multe exemple de celule roșii parțiale și slabe D prin aglutinare directă, dar nu vor detecta celule Dvı.

DEPOZITARE

Flacoanele cu reactiv trebuie păstrate la 2 - 8ºC la primire. Depozitare prelungită la temperaturile din afara acestui interval pot duce la pierderea accelerată a reactivului reactivitate. Acest reactiv a fost supus unor studii de stabilitate la transport la 37 ° C și -25 ° C conform descrierii din documentul EN13640: 2002.

COLECTAREA ȘI PREGĂTIREA DE PROBE

Probele de sânge trase cu sau fără anticoagulant pot fi utilizate pentru antigen tastare. Dacă testarea este întârziată, depozitați specimenele la 2-8 ° C. EDTA și citrat eșantioanele ar trebui să fie tipărite în termen de 7 zile de la colectare. Probele colectate în ACD, CPD sau CPDA-1 pot fi testate până la 35 de zile de la data de retragere. Toate probele de sânge trebuie spălate cel puțin de două ori cu PBS sau soluție salină izotonică înainte de a fi testate. Probele care prezintă dovezi de liză pot da rezultate nesigure.

PRECAUȚII
1. Reactivii sunt destinați numai pentru diagnosticul in vitro.
2. Dacă un flacon de reactiv este crăpat sau scurs, aruncați imediat conținutul.
3. Nu utilizați reactivii după data expirării (vezi Eticheta flaconului).
4. Nu utilizați reactivii dacă există un precipitat.
5. La manipularea reactivilor, cum ar fi mănuși de unică folosință și un strat de laborator.
6. Reactivii au fost fitieriți printr-o capsulă de 0,2 pm pentru a reduce povara biologică. Odată ce un flacon a fost deschis, conținutul trebuie să rămână viabil până la data de expirare, atât timp cât nu există turbiditate marcată, ceea ce poate indica deteriorarea sau contaminarea reactivilor.
7. Reactivii conțin <0,1% azidă de sodiu. Azida de sodiu poate fi toxică dacă este ingerată și poate reacționa cu plumbul din plumb și cupru pentru a forma azide metalice explozive. Înlăturați-le cu cantități mari de apă.
8. Materialele utilizate pentru producerea produselor au fost testate la sursă și s-au dovedit a fi negative pentru anticorpii HIV 1 + 2 și HCV și HBsAg utilizând teste microbiologice aprobate.
9. Niciun teste cunoscut nu poate garanta că produsele derivate din surse umane sau animale nu conțin agenți infecțioși. Trebuie să se acorde atenție utilizării și eliminării fiecărui flacon și a conținutului acestuia

ELIMINAREA REACTIVULUI ȘI DEZVOLTAREA SPĂLĂRILOR
Pentru informații despre eliminarea reactivului și despre decontaminarea unui loc de scurgere, consultați Fișe tehnice de securitate pentru materiale, disponibile la cerere.

CONTROALE ȘI RECOMANDĂRI
1. Se recomandă un control pozitiv (în mod ideal celulele R1r), un control negativ (celule rr ideale) și un control negativ al reactivilor (cum ar fi Lorne Negative Control, catalogul # 650010) să fie testate în paralel cu fiecare lot de teste. Testele trebuie considerate nevalabile dacă controalele nu prezintă rezultatele așteptate.
2. Când tastați eritrocitele de la un pacient este important ca un reactiv să fie negativ controlul este inclus, deoarece potențiatorii macromoleculați ai reactivului pot produce reacții false pozitive cu celule acoperite cu IgG, de ex. în cazurile de AIHA sau HDN. Se recomandă controlul negativ Lorne pentru reactivii monoclonali anti-D (Cat # 650010).
3. Variantele de antigen slabe și parțiale D sunt slab detectate de cardul de gel, microtitrare și tehnica de diapozitive. Se recomandă să fie slab și parțial D sunt testate folosind tehnica de testare a tuburilor.
4. În Tehnicile Recomandate, un volum este de aproximativ 50µl când se utilizează picuratorul de flacon furnizat.
5. Utilizarea reactivilor și interpretarea rezultatelor trebuie să fie efectuate de personal bine instruit și calificat, în conformitate cu cerințele țării în care reactivii sunt utilizați.
6. Utilizatorul trebuie să determine compatibilitatea reactivilor pentru utilizarea în alte tehnici.

REACTIVI ȘI MATERIALE NECESARE
• Aplicatori.
• Cititor automat de placă.
• Carduri de identitate DiaMed (Neutru).
• DiaMed ID-Centrifuge.
• DiaMed ID-CellStab.
• Diapozitive cu microscop din sticlă.
• Tuburi de testare din sticlă (10 x 75 mm sau 12 x 75 mm).
• Centrifugă cu microplăci.
• Casete Ortho BioVue System (Neutru).
• Ortho BioVue System Centrifuge.
• Ortho 0,8% Diluant pentru celule roșii.
• Agitator de placă.
• soluție PBS (pH 6,8-7,2) sau soluție salină izotonică (pH 6,5-7,5).
• celule roșii pozitive (în mod ideal R1r) și negative (rr).
• Centrifuga cu tub de testare.
• microplăci cu valori "U" validate.
• Pipete volumetrice.

TEHNICI RECOMANDATE
A. Tehnica tubului
1. Se prepară o suspensie de 2-3% de celule roșii de test spălate în PBS sau soluție salină izotonică.
2. Așezați într-un tub de etichetare etichetat: 1 volum de reactiv Lorne Anti-D și 1 volum de suspensie de test pentru eritrocite.
3. Se amestecă bine și se centrifughează toate tuburile timp de 20 de secunde la 1000 rcf sau pentru un timp și forță alternative adecvate.

4. Resuspendați ușor butonul de celule roșii și citiți macroscopic pentru aglutinare
5. Orice tuburi care prezintă un rezultat negativ sau dubios (cum se poate întâmpla în cazul probelor slabe D) trebuie incubate timp de 15 minute la temperatura camerei.
6. După incubare, repetați pașii 3 și 4.

B. Tehnica de tipare micro-diaMed-ID
1. Se prepară o suspensie de 0,8% de celule roșii de testare spălate în ID-CellStab.
2. Îndepărtați folia de aluminiu din cât mai multe microtuburi, după cum este necesar.
3. Amplasați în microtubul corespunzător: 50µl suspensie de test de celule roșii și 25µl de Lorne Anti-D.
4. Centrifugați cardul (ID-urile) de identitate într-o centrifugă cu card de gel Diamed.
5. Citiți macroscopic pentru aglutinare.

C. Tehnica de tiparire Ortho BioVue (carduri neutre)
1. Se prepară o suspensie de 0,8% de celule roșii testate spălate în diluant Ortho de celule roșii de 0,9%.
2. Îndepărtați folia de aluminiu din cât mai multe camere de reacție, după cum este necesar.
3. Amplasați în camera de reacție adecvată: 50 pl de suspensie de celule roșii test și 40 pl de reactiv Lorne Anti-D.
4. Centrifuge caseta (e) într-o Centrifugă Ortho BioVue System.
5. Citiți macroscopic pentru aglutinare.

D. Tehnica microplăcilor, folosind sondele "U"
1. Se prepară o suspensie de 2-3% de celule roșii testate spălate în PBS sau soluție salină izotonică.
2. Așezați în godeul corespunzător: 1 volum de reactiv Lorne Anti-D și 1 suspensie de test pentru celule roșii.
3. Se amestecă bine, de preferință folosind un agitator de microplăci, având grijă să se evite contaminare transversală.
4. Incubează la temperatura camerei timp de 15 minute (timpul depinde de utilizator).
5. Centrifuge microplaciul timp de 1 minut la 140 rcf sau pentru un timp și forță alternative adecvate.
6. Resuspendați butoanele celulare utilizând agitație controlată atent pe a microplaci
7. Citiți macroscopic sau cu un cititor automat validat.
8. Orice reacție slabă trebuie repetată prin tehnica tubului.

E. Tehnica diapozitivelor
1. Se prepară o suspensie de eritrocite de 35-45% în ser, plasmă sau PBS sau soluție salină izotonică.
2. Așezați pe o placă de sticlă etichetă: 1 volum de reactiv Lorne Anti-D și 1volumul suspensiei de test pentru eritrocite.
3. Folosind un stick de aplicator curat, amestecați reactivul și celulele pe o suprafață de aproximativ 20 x 40 mm.
4. Înclinați ușor glisorul înainte și înapoi timp de 30 de secunde, ocazional în continuare amestecarea în timpul perioadei de 2minute, menținând glisarea la temperatura camerei.
5. Citiți macroscopic după 2 minute pe o lumină difuză și nu greșeala firelor de fir ca aglutinare.
6. Orice reacție slabă trebuie repetată prin tehnica tubului.

INTERPRETAREA REZULTATELOR TESTELOR
1. Pozitive: Aglutinarea celulelor roșii de testare reprezintă un rezultat pozitiv al testului și, în cadrul limitărilor acceptate ale procedurii de testare, indică prezența antigenului D pe celulele roșii de test.
2. Negativ: nici o aglutinare a celulelor roșii test nu reprezintă un rezultat negativ și în limitele acceptate ale procedurii de testare, indică absența antigenului D pe celulele roșii test.
3. Se vor exclude rezultatele testelor de celule care sunt aglutinate folosind controlul negativ al reactivului, deoarece aglutinarea este cel mai probabil cauzată de efectul potențatorilor macromoleculari în reactiv asupra celulelor sensibilizate.

STABILITATEA REACȚIILOR
1. Citiți toate testele cu tuburi și microplăci imediat după centrifugare.
2. Testele diapozitive trebuie interpretate în două minute pentru a se asigura specificitatea și pentru a evita posibilitatea ca un rezultat negativ să poată fi interpretat incorect ca pozitiv datorită uscării reactivului.
3. Trebuie interpretat cu prudență interpretarea rezultatelor testelor efectuate la temperaturi diferite de cele recomandate.

LIMITAREA
1. Lorne Anti-D nu este adecvată pentru utilizarea cu celule enzimatice tratate, celule suspendate în LISS sau utilizate în tehnicile antiglobulinice indirecte (IAT).
2. Sângele stocat poate produce reacții mai slabe decât sângele proaspăt.
3. Se poate observa o aglutinare falsă pozitivă din cauza prezenței potențiatori macromoleculare în reactiv atunci când se testează IgG sensibilizată celule, de ex. AIHA, HDN.
4. De asemenea, pot apărea rezultate fals pozitive sau false, datorită:

• Contaminarea materialelor de testare
• Depozitarea necorespunzătoare, concentrația celulară, timpul de incubare sau temperatura
• Centrifugare necorespunzătoare sau excesivă
• Abaterea de la tehnicile recomandate

CARACTERISTICI SPECIFICE DE PERFORMANȚĂ

1. Reactivii au fost caracterizați prin toate procedurile menționate în Tehnicile recomandate.
2. Înainte de eliberare, fiecare lot de Lorne Monoclonal Anti-D Clone1 și Anti-D Clona 2 este testată prin tehnicile recomandate împotriva unui grup de celule roșii antigen-pozitive pentru a asigura o reactivitate adecvată.
3. Reactivii de grupare anti-D pentru gruparea D a pacienților nu trebuie să reacționeze cu celulele DVI utilizând metoda (metodele) recomandată (e) pentru utilizare.
4. Specificitatea anticorpilor monoclonali sursă este demonstrată utilizând un grup de celule antigen-negative.
5. Eficacitatea reactivilor a fost testată pe baza următorului standard de referință pentru potența minimă obținut de la Institutul Național de Standarde și Controale Biologice (NIBSC):
• Referința anti-D 99/836.
6. Controlul calității reactivilor a fost efectuat utilizând celule roșii care au avut a fost spălat de două ori cu PBS sau cu soluție salină izotonică înainte de utilizare.
7. Reactivii respectă recomandările cuprinse în ultimul număr al Ghidului pentru serviciile britanice de transfuzie a sângelui.

DECLINAREA RESPONSABILITĂȚII

1. Utilizatorul este responsabil pentru performanța reactivilor prin orice altă metodă decât cea menționată în Tehnicile recomandate.
2. Orice abatere de la tehnicile recomandate trebuie validată înainte de utilizare9.

DIMENSIUNI DISPONIBILE REACTIVI

	Dimensiune flacon	*Numar Catalog*
Anti-D Clone 1 Monoclonal	10ml	730010
	1000ml	730000*
Anti- D Clone 2 Monoclonal	10ml	710010
	1000ml	710000*

* --- Această dimensiune este numai pentru utilizarea în fabricație ulterioară (FFMU) și, prin urmare, nu este Marcajul CE.

TABEL SIMBOLURI

LOT	Batch Number	IVD	*in-vitro* Diagnostic
REF	Catalogue Reference		Store At
	Expiry Date		Manufacturer
	Read Pack Insert		

Pentru disponibilitatea altror dimensiuni, Va rugam sa contactati:
Lorne Laboratories Limited
Unit 1 Cutbush Park Industrial Estate
Danehill
Lower Earley, Reading,
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MONOCLONAL BLOOD GROUPING REAGENTS.

LORNE LABORATORIES

CE 1434

DIRECTIONS FOR USE

Anti-D Clone 1 and Clone 2 Monoclonal:

For Tube, Bio-Rad-ID, Ortho BioVue, Microplate and Slide Techniques.

SUMMARY

The Rh blood group system was discovered in 1940. The D antigen is the most clinically significant non-ABO red blood cell antigen and has been implicated in causing Haemolytic Transfusion Reactions and Haemolytic Disease of the Newborn.

Anti-D	Phenotype	Caucasians %[3]	Afro-Americans %[3]
+	Rh D +ve	83	92
0	Rh D -ve	17	8

INTENDED PURPOSE

The Anti-D reagents are blood grouping reagents intended to be used to qualitatively determine the presence or absence of the Rh D antigen on the red cells of blood donors or patients requiring a blood transfusion when tested in accordance with the recommended techniques stated in this IFU.

PRINCIPLE

The reagents contain antibodies against the D antigen on human red cells and will cause direct agglutination (clumping) of human red cells that carry the D antigen. No agglutination (no clumping) generally indicates the absence of the D antigen on human red cells (see **Limitations**).

REAGENT

Lorne Monoclonal IgM Anti-D Clone 1 and Clone 2 blood grouping reagents are low protein reagents containing a human monoclonal IgM antibody diluted with sodium chloride (0.9 g%), bovine albumin (2.0 g%) and macromolecular potentiators (1.5 g%). When typing patient samples, each reagent will directly agglutinate Rh D positive cells, including majority of variants (but not D^{VI}) and a high proportion of weak D (D^{u}) phenotypes when using the recommended techniques. The reagents do not contain or consist of CMR substances, or endocrine disrupting substances or that could result in sensitisation or an allergic reaction by the user. Each reagent is supplied at optimal dilution for use on patient samples with all recommended techniques stated below without need for further dilution or addition. For lot reference number and expiry date see Vial Label.

Product	Cell Line / Clone
Anti-D Clone 1	RUM-1
Anti-D Clone 2	MS-201

WEAKENED EXPRESSION OF THE RhD ANTIGEN

The collective term D^{u} is widely used to describe red cells which have a weaker expression of the D antigen than normal. The term weak D denotes individuals with a reduced number of complete D antigen sites per red cell. The term partial D denotes individuals with missing D antigen epitopes. D^{VI} cells is a partial D category which misses most D epitopes. Both Clone 1 and Clone 2 reagents will detect most examples of partial and weak D red cells by direct agglutination, but will not detect D^{u} cells.

STORAGE

Reagent vials should be stored at 2 - 8ºC on receipt. Prolonged storage at temperatures outside this range may result in accelerated loss of reagent reactivity. This reagent has undergone transportation stability studies at 37ºC and –25ºC as described in document BS EN ISO 23640:2015.

SAMPLE COLLECTION AND PREPARATION

Blood samples can be collected into EDTA, citrate, CPDA anticoagulants or as a clotted sample. The samples should be tested as soon as possible following collection. If a delay in testing should occur, store the samples at 2-8°C. Samples displaying gross haemolysis or microbial contamination should not be used for testing. Blood samples showing evidence of lysis may give unreliable results. It is preferable (but not essential) to wash all blood samples with PBS or Isotonic saline before being tested.

PRECAUTIONS

1. The reagents are intended for in vitro diagnostic use only.
2. If a reagent vial is cracked or leaking, discard the contents immediately.
3. Do not use the reagents past the expiration date (see Vial Label).
4. Do not use the reagents if a precipitate is present.
5. Protective clothing should be worn when handling the reagents, such as disposable gloves and a laboratory coat.
6. The reagents have been filtered through a 0.2 μm capsule to reduce the bio-burden, but are not supplied sterile. Once a vial has been opened the contents should remain viable up until the expiry date as long as there is no marked turbidity, which can indicate reagent deterioration or contamination.
7. The reagents contain < 0.1% sodium azide. Sodium azide may be toxic if ingested and may react with lead and copper plumbing to form explosive metal azides. On disposal flush away with large volumes of water.
8. Materials used to produce the products were tested at source and found to be negative for HIV 1+2 and HCV antibodies and HBsAg using approved microbiological tests.
9. No known tests can guarantee that products derived from human or animal sources are free from infectious agents. Care must be taken in the use and disposal of each vial and its contents.

DISPOSAL OF REAGENT AND DEALING WITH SPILLAGES

For information on disposal of the reagent and decontamination of a spillage site see Material Safety Data Sheets, available on request.

CONTROLS AND ADVICE

1. It is recommended a positive control (ideally R,r cells), and a negative control (ideally rr cells) be tested in parallel with each batch of tests. Tests must be considered invalid if controls do not show expected results.
2. When typing red cells from a patient who is diagnosed with a disease that causes the red cells to become coated with antibody or other proteins (such as HDN, AIHA), it is important to test the patient's red cells using Lorne's Monoclonal D Negative Control (catalogue # 650010). Tests must be considered invalid if red cells are agglutinated using Lorne's Monoclonal D Negative Control (catalogue # 650010).
3. Weak and partial D antigen variants are poorly detected by the gel card, microtitre plate and slide technique. It is recommended that weak and partial D variants are tested using the tube test technique.
4. Before use, let the reagent warm up to room temperature. As soon as the reagent has been used, put the reagent back in storage at 2-8°C.
5. In the Recommended Techniques one volume is approximately 50μl when using the vial dropper provided.
6. The use of the reagents and the interpretation of results must be carried out by properly trained and qualified personnel in accordance with the requirements of the country where the reagents are in use.
7. The user must the determine suitability of the reagents for use in other techniques.

REAGENTS AND MATERIALS REQUIRED

- Applicator sticks.
- Automatic plate reader.
- Bio-Rad ID-Cards (NaCl, enzyme test and cold agglutinins).
- Bio-Rad ID-Centrifuge.
- Bio-Rad ID-CellStab or ID-Diluent 2.
- Glass microscope slides or white card tiles.
- Glass test tubes (10 x 75 mm or 12 x 75 mm).
- Microplate centrifuge.
- Ortho BioVue System Cassettes (Neutral).
- Ortho BioVue System Centrifuge.
- Ortho 0.8% Red Cell Diluent.
- Plate shaker.
- PBS solution (pH 6.8–7.2) or Isotonic saline solution (pH 6.5–7.5).
- Positive (ideally R,r) and negative (rr) control red cells.
- Test tube centrifuge.
- Validated "U" well microplates.
- Volumetric pipettes.

RECOMMENDED TECHNIQUES

A. Tube Technique

1. Prepare a 2-3% suspension of red cells in PBS or Isotonic saline.
2. Place in a labelled test tube: 1 volume of Lorne Anti-D reagent and 1 volume of red cell suspension.
3. Mix thoroughly and centrifuge all tubes for 20 seconds at 1000 rcf or for a suitable alternative time and force.
4. Gently resuspend red cell button and read macroscopically for agglutination
5. Any tubes, which show negative or questionable result (as can happen with weak D samples), should be incubated for 15 minutes at room temperature.
6. Following incubation, repeat steps 3 and 4.

B. Bio-Rad-ID Technique (NaCl, enzyme test and cold agglutinins cards)

1. Prepare a 0.8% suspension of red cells in ID-CellStab or ID-Diluent 2.
2. Remove aluminium foil from as many microtubes as needed.
3. Place in appropriate microtube: 50μl of red cell suspension and 25μl of Lorne Anti-D reagent.
4. Centrifuge ID-Card(s) in a Bio-Rad gel card centrifuge.
5. Read macroscopically for agglutination.

C. Ortho BioVue Technique (Neutral cards)

1. Prepare a 0.8% suspension of red cells in 0.8% Ortho Red Cell Diluent.
2. Remove aluminium foil from as many reaction chambers as needed.
3. Place in appropriate reaction chamber: 50μl of red cell suspension and 40μl of Lorne Anti-D reagent.
4. Centrifuge cassette(s) in an Ortho BioVue System Centrifuge.
5. Read macroscopically for agglutination.

D. Microplate Technique, using "U" wells

1. Prepare a 2-3% suspension of red cells in PBS or Isotonic saline.
2. Place in the appropriate well: 1 volume Lorne Anti-D reagent and 1 volume

red cell suspension.
3. Mix thoroughly, preferably using a microplate shaker, taking care to avoid cross-well contamination.
4. Incubate at room temperature for 15 minutes (time dependant on user).
5. Centrifuge the microplate for 1 minute at 140 rcf or for a suitable alternative time and force.
6. Resuspend the cell buttons using carefully controlled agitation on a microplate shaker
7. Read macroscopically or with a validated automatic reader.
8. Any weak reactions should be repeated by the tube technique.

E. Slide Technique
1. Prepare a 35-45% suspension of red cells in serum, plasma or PBS or Isotonic saline or use anti-coagulated whole blood (in its own plasma).
2. Place on a labelled glass slide or card tile: 1 volume of Lorne Anti-D reagent and 1 volume of red cell suspension.
3. Using a clean applicator stick, mix reagent and cells over an area of about 20 x 40 mm.
4. Slowly tilt the slide back and forth for 30 seconds, with occasional further mixing during the 1-minute period, maintaining slide at room temperature.
5. Read macroscopically after 1 minute over a diffuse light and do not mistake fibrin strands as agglutination.
6. Any weak reactions should be repeated by the tube technique.

INTERPRETATION OF TEST RESULTS
1. Positive: Agglutination of the red cells constitutes a positive test result and within accepted limitations of test procedure, indicates the presence of the D antigen on the red cells.
2. Negative: No agglutination of the red cells constitutes a negative result and within the accepted limitations of the test procedure, indicates the absence of the D antigen on the red cells.
3. Test results of cells that are agglutinated using the reagent negative control shall be excluded, as the agglutination is most probably caused by the effect of the macromolecular potentiators in the reagent on sensitised cells.

STABILITY OF THE REACTIONS
1. Read all tube and microplate tests immediately after centrifugation.
2. Slide tests should be interpreted after a maximum of one minute to ensure specificity and to avoid the possibility a negative result may be incorrectly interpreted as positive due to drying of the reagent.
3. Caution should be exercised in the interpretation of results of tests performed at temperatures other than those recommended.

LIMITATIONS
1. Lorne Anti-D is not suitable for use with enzyme treated cells, cells suspended in LISS or for use in indirect antiglobulin (IAT) techniques.
2. Stored blood may give weaker reactions than fresh blood.
3. False positive agglutination may be seen due to the presence of macromolecular potentiators in the reagent when testing IgG sensitised cells, e.g. AIHA, HDN.
4. False positive or false negative results may also occur due to:
   - Contamination of test materials
   - Improper storage, cell concentration, incubation time or temperature
   - Improper or excessive centrifugation
   - Deviation from the recommended techniques

SPECIFIC PERFORMANCE CHARACTERISTICS
1. Prior to release, each lot of Lorne Anti-D monoclonal reagent was tested using the recommended test methods listed in this IFU. The tests complied with the test requirements as stated in the current version/issue of the 'Guidelines for the Blood Transfusion Services in the United Kingdom' and the 'Common Technical Specifications'.
2. Anti-D grouping reagents for D grouping of patients should not react with D^{VI} cells using the method(s) recommended for use.
3. Specificity of source monoclonal antibodies is demonstrated using a panel of antigen-negative cells.
4. The potency of the reagents has been tested against the following minimum potency reference standard obtained from National Institute of Biological Standards and Controls (NIBSC):
   - Anti-D reference 99/836.
5. The Quality Control of the reagents was performed using red cells with phenotypes that were verified by a UK blood transfusion centre and had been washed with PBS or Isotonic saline prior to use.

DISCLAIMER
1. The user is responsible for the performance of the reagents by any method other than those mentioned in the Recommended Techniques.
2. Any deviations from the Recommended Techniques should be validated prior to use[9].

BIBLIOGRAPHY

1. Issitt PD. Applied Blood Group Serology, 3rd Edition, Montgomery Scientific, Miami, 1985, Chapter 10.
2. AABB Technical Manual, 16th Edition, AABB 2008.
3. Marion E. Reid and Christine Lomas-Francis, Blood Group Antigens and Antibodies, SBB Books, New York 2007; Page 192.
4. Jones J, Scott ML, Voak D. Monoclonal anti-D specificity and Rh D structure: criteria for selection of monoclonal anti-D reagents for routine typing of patients and donors. Transfusion Medicine 1995. 5, 171-184
5. Guidelines for the Blood Transfusion Service in the United Kingdom, 6th Edition 2002. The Stationery Office.
6. British Committee for Standards in Haematology, Blood Transfusion Task Force. Recommendations for evaluation, validation and implementation of new techniques for blood grouping, antibody screening and cross matching. Transfusion Medicine, 1995, 5, 145-150.

AVAILABLE REAGENT SIZES

	Vial Size	Catalogue Number	Test per vial
Anti-D Clone 1 Monoclonal	10 ml	730010	200
	1000 ml	730000*	20,000
	5000 ml	730000X5*	100,000
Anti-D Clone 2 Monoclonal	10 ml	710010	200
	1000 ml	710000*	20,000
	5000 ml	710000X5*	100,000

*This size is For Further Manufacturing Use (FFMU) only and is therefore not CE marked.

EC REP Advena Ltd, Tower Business Centre, 2nd Floor, Tower Street, Swatar, BKR 4013, Malta

LORNE LABORATORIES

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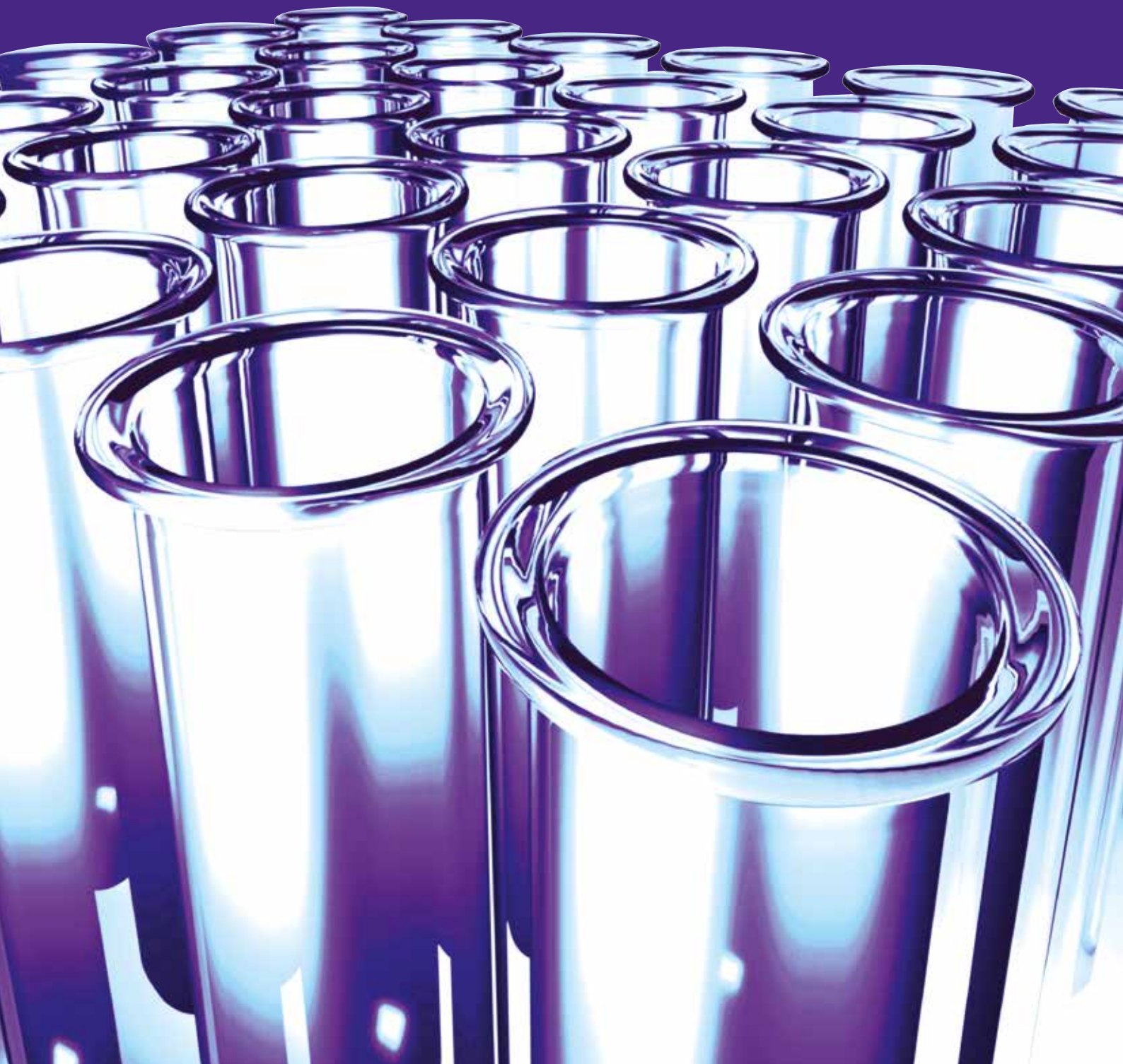
LORNE LABORATORIES

Blood Reagents and Diagnostic Kits

Quality blood reagents and diagnostic kits delivered worldwide

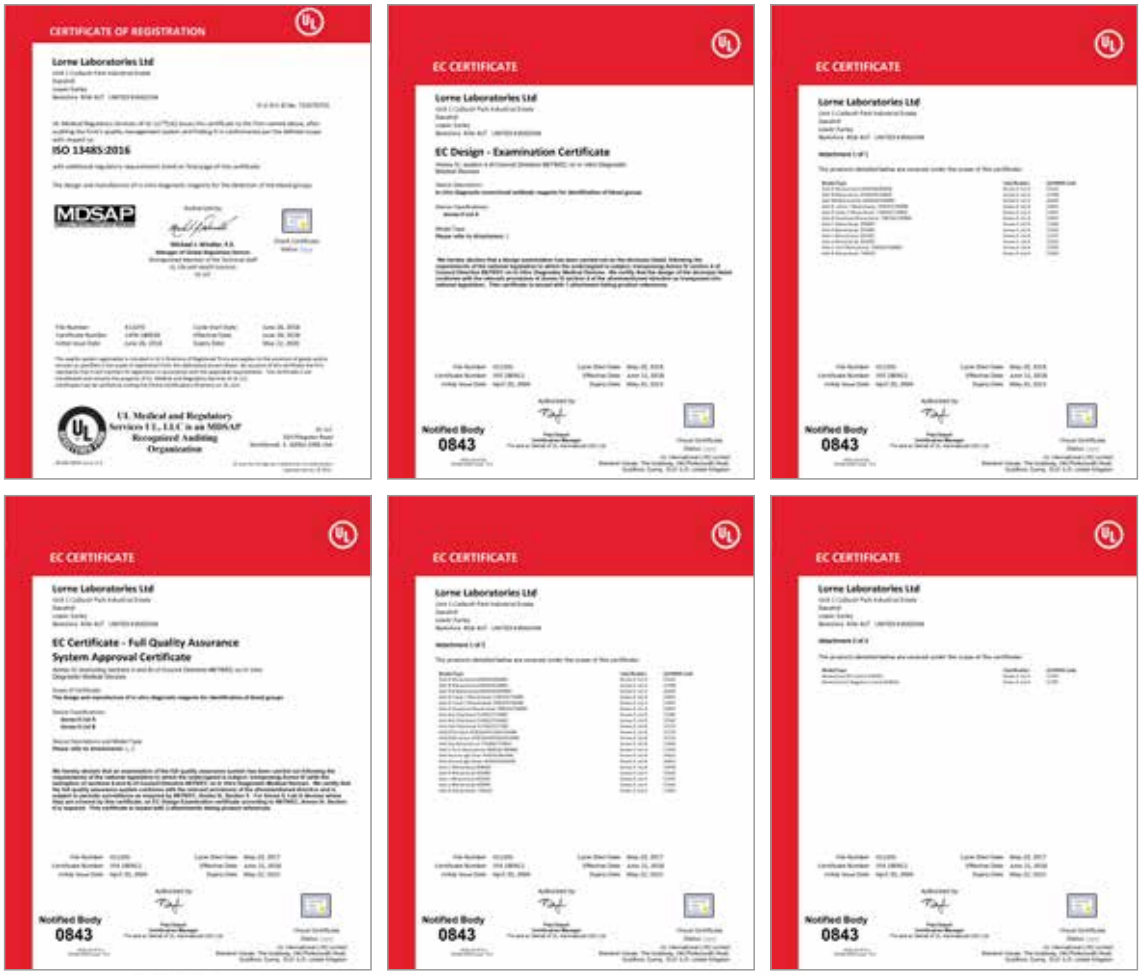


LORNE LABORATORIES

Lorne Laboratories provides high quality blood-grouping reagents and diagnostic kits. We do so at affordable prices and back this up with excellent customer service.

For over forty four years, Lorne has seen that philosophy transform the company from a small UK operation to one that spans the globe. The Lorne name is known and respected in over 110 countries around the world and it has come to mean ‘quality’ to the many blood transfusion professionals who use the products, both in the UK and across the five continents in which we operate.

Lorne has achieved ISO 13485 and MDSAP accreditation and our reagents and diagnostic kits are all CE marked. A significant number of our blood-grouping reagents are also registered with Health Canada.



Contents

LORNE LABORATORIES

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ABO SYSTEM – MONOCLONAL REAGENTS

Lorne Monoclonal IgM ABO blood grouping reagents contain mouse monoclonal antibodies diluted in a phosphate buffer containing sodium chloride, EDTA and bovine albumin. Each reagent is supplied at optimal dilution for use by slide, tube, gel card and microplate techniques.

Item	Product Code	Size	Maximum Shelf Life
Anti-A Monoclonal	600010	10ml	36 Months
Anti-B Monoclonal	610010	10ml	36 Months
Anti-A,B Monoclonal	620010	10ml	36 Months

Lorne Anti-A_1 Lectin blood grouping reagent is prepared from an extract of *Dolichos biflorus* seeds, diluted with a sodium chloride solution containing bovine albumin. The reagent is supplied at optimal dilution for use by tube technique.
Lorne Anti-H Lectin blood grouping reagent is prepared from an extract of *Ulex europaeus* seeds, diluted with a sodium chloride solution containing bovine albumin. The reagent is supplied at optimal dilution for use by tube technique.

Anti-A_1 Lectin	116005	5ml	24 Months
Anti-H Lectin	115002	2ml	24 Months

RHESUS SYSTEM – MONOCLONAL REAGENTS

Lorne Monoclonal IgM Anti-D Clone 1 and Clone 2 blood grouping reagents are low protein reagents containing a human monoclonal IgM antibody diluted with sodium chloride, bovine albumin and macromolecular potentiators. When typing patient samples, each reagent will directly agglutinate Rh D positive cells, including the majority of variants (but not D^{VI}) and a high proportion of weak D (D^u) phenotypes when using the slide, tube, gel card and microplate techniques.

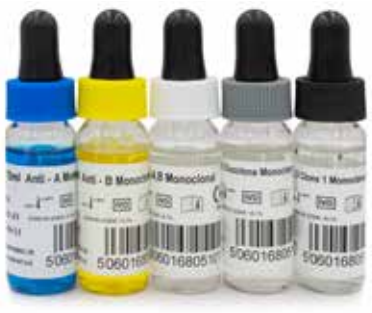
Item	Product Code	Size	Maximum Shelf Life
Anti-D Clone 1 Monoclonal	730010	10ml	30 Months
Anti-D Clone 2 Monoclonal	710010	10ml	30 Months

Lorne Monoclonal Anti-D Duoclone blood grouping reagent is a low protein, blended reagent containing human monoclonal IgM and IgG Anti-D, diluted in a phosphate buffer containing sodium chloride, bovine albumin and macromolecular potentiators. When typing patient samples, this reagent will directly agglutinate Rh D positive cells, including the majority of variants (but not D^{VI}) and a high proportion of weak D (D^u) phenotypes when using the slide, tube, gel card and microplate techniques. It will agglutinate D^{VI} cells in the IAT phase of testing.

Anti-D Duoclone Monoclonal	740010	10ml	30 Months

Lorne Monoclonal IgM Anti-Rh blood grouping reagents are low protein reagents containing human monoclonal antibodies diluted with sodium chloride, bovine albumin and macromolecular potentiators. Each reagent is supplied at optimal dilution for use by slide, tube, gel card and microplate techniques.

Anti-C Monoclonal	690005	5ml	24 Months
Anti-C^w Monoclonal	750002	2ml	24 Months
Anti-E Monoclonal	691005	5ml	24 Months
Anti-c Monoclonal	692005	5ml	24 Months
Anti-e Monoclonal	693005	5ml	24 Months
Anti-C+D+E Monoclonal	700010	10ml	24 Months



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GROUPING REAGENTS FOR M, N AND S BLOOD GROUP SYSTEMS

Lorne Human Anti-M blood grouping reagent is prepared from human serum diluted in a sodium chloride solution containing bovine albumin. The reagent is supplied at optimal dilution for use by tube and gel card techniques.

Item	Product Code	Size	Maximum Shelf Life
Anti-M Polyclonal	311002	2ml	24 Months

Lorne Anti-N Lectin blood grouping reagent is prepared from an extract of *Vicia*, diluted with a sodium chloride solution containing bovine albumin. The reagent is supplied at optimal dilution for use by tube and gel card techniques.

Anti-N Lectin	312002	2ml	24 Months

Lorne Monoclonal Anti-S and Anti-s blood grouping reagents contain human monoclonal antibodies diluted in a phosphate buffer containing sodium chloride and bovine albumin. They are supplied at optimal dilution for use by indirect Coombs tube test and gel card techniques.

Anti-S Monoclonal	770002	2ml	24 Months
Anti-s Monoclonal	771002	2ml	24 Months

GROUPING REAGENTS FOR KELL BLOOD GROUP SYSTEM

Lorne Monoclonal Anti-K blood grouping reagent is a low protein reagent containing the monoclonal IgM antibody, diluted in a phosphate buffer containing sodium chloride, bovine albumin and macromolecular potentiators. The reagent is supplied at optimal dilution for use by slide, tube, gel card and microplate techniques.

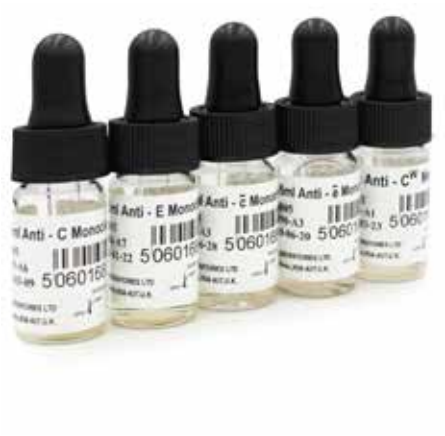
Item	Product Code	Size	Maximum Shelf Life
Anti-K Monoclonal	760010	10ml	24 Months

Lorne Monoclonal Anti-k (Cellano) blood grouping reagent contains monoclonal IgG antibody diluted in sodium chloride containing macromolecular potentiators and bovine albumin. Each reagent is supplied at optimal dilution for use by indirect Coombs tube and gel card techniques without the need for further dilution or addition.

Anti-k (Cellano) Monoclonal	325002	2ml	24 Months

Lorne Human Anti-Kp^a and Anti-Kp^b blood grouping reagents are prepared from human serum diluted in sodium chloride containing macromolecular potentiators and bovine albumin. Each reagent is supplied at optimal dilution for use by indirect Coombs tube and gel card techniques without the need for further dilution or addition.

Anti-Kp^a Polyclonal	321002	2ml	24 Months
Anti-Kp^b Polyclonal	322002	2ml	24 Months



All products available in bulk quantites

GROUPING REAGENTS FOR RARE BLOOD GROUPS

Lorne Monoclonal Fy^a blood grouping reagent contains human monoclonal antibodies diluted in a phosphate buffer containing sodium chloride and bovine albumin.
Lorne Human Anti-Fy^b blood grouping reagent is prepared from human serum diluted in a sodium chloride solution containing macromolecular potentiators and bovine albumin. Each reagent is supplied at optimal dilution for use by indirect Coombs tube test and gel card techniques.

Item	Product Code	Size	Maximum Shelf Life
Anti-Fy^a Monoclonal	774002	2ml	24 Months
Anti-Fy^b Polyclonal	317002	2ml	24 Months

Lorne Anti-Jk^a and Anti-Jk^b Monoclonal reagents contain human monoclonal IgM antibodies, sodium chloride, phosphate buffer and bovine albumin. When typing red cells in accordance with the instructions for use, the reagents will directly agglutinate either Jk^a positive cells or Jk^b positive cells. Both reagents are supplied at optimal dilution for use by the test tube technique.

Anti-Jk^a Monoclonal	775002	2ml	24 Months
Anti-Jk^b Monoclonal	776002	2ml	24 Months

Lorne Human Anti-Lu^a and Anti-Lu^b blood grouping reagents are prepared from human serum diluted in a sodium chloride solution containing macromolecular potentiators and bovine albumin. Each reagent is supplied at optimal dilution for use by indirect Coombs tube test and gel card techniques.

Anti-Lu^a Polyclonal	330002	2ml	24 Months
Anti-Lu^b Polyclonal	331002	2ml	24 Months

Lorne Monoclonal IgM Anti-P_1 blood grouping reagent contains mouse monoclonal IgM antibodies, diluted in a solution containing sodium chloride and bovine albumin. The reagent is supplied at optimal dilution for use by tube and gel card techniques.

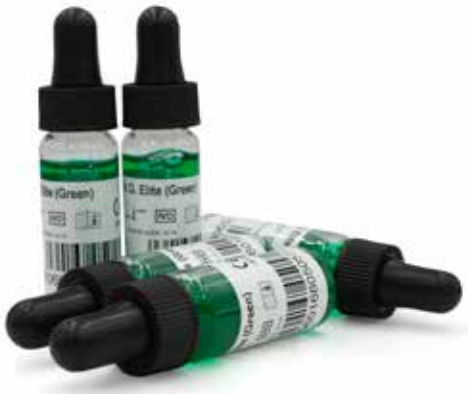
Anti-P_1 Monoclonal	315002	2ml	24 Months

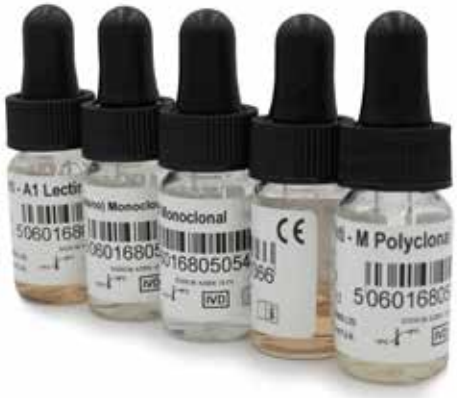
Lorne Monoclonal Anti-Le^a contains human monoclonal IgM and Anti-Le^b contains mouse monoclonal IgM antibodies, diluted in a phosphate buffer containing sodium chloride, EDTA, bovine albumin and macromolecular potentiators. Each reagent is supplied at optimal dilution for use by the tube technique. The Anti-Le^a reagent can also be used for gel card techniques.

Anti-Le^a Monoclonal	632002	2ml	24 Months
Anti-Le^b Monoclonal	631002	2ml	24 Months

Lorne Human Anti-Di^a blood grouping reagent is prepared from human serum diluted in a sodium chloride solution containing macromolecular potentiators and bovine albumin. The reagent is supplied at optimal dilution for use by indirect Coombs tube test and gel card techniques.

Anti-Di^a Polyclonal	328002	2ml	24 Months





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CONTROL REAGENTS

Lorne Monoclonal Rh Control is formulated with the same levels of potentiators and protein as Lorne Monoclonal Rh Grouping Reagents with the blood group antibodies omitted. The reagent is supplied at optimal dilution for use by slide, tube, gel card and microplate techniques.

Item	Product Code	Size	Maximum Shelf Life
Monoclonal Rh Control	640010	10ml	24 Months

Lorne Monoclonal D Negative Control is for the control of Monoclonal Anti-D reagents and is formulated with the same concentrations of phosphate buffer, sodium chloride, bovine albumin and macromolecular potentiators as Lorne Monoclonal Anti-D reagents with the antibodies omitted. The reagent is supplied at optimal dilution for use by slide, tube, gel card and microplate techniques.

Monoclonal D Negative Control	650010	10ml	30 Months

Lorne Inert AB Serum is prepared from pooled human serum. No potentiators or any other chemicals have been added to the reagent. This reagent is supplied at optimal dilution for use by the techniques recommended for the reagent to be controlled.

Inert AB Serum	110010	10ml	24 Months

Lorne Precise Weak Anti-D Control Reagent is prepared from pools of human serum containing low activity Anti-D. The pool is diluted in inert serum to give a final concentration of 0.09 IU/ml Anti-D. ABO antibodies are not absorbed. This polyclonal reagent is supplied at the optimal dilution, for use by the techniques recommended for the reagent to be controlled.

Precise Weak Anti-D	209005	5ml	24 Months

ANTI-HUMAN IgG REAGENT

Lorne Monospecific Anti-Human IgG Clear and Anti-Human IgG Green reagents contain anti-human IgG derived from rabbits. All non-specific activity is removed by absorption. These monospecific reagents are supplied at optimal dilution, for use by spin tube technique.

Item	Product Code	Size	Maximum Shelf Life
Anti-Human IgG (Clear)	401010	10ml	24 Months
Anti-Human IgG (Green)	402010	10ml	24 Months

ANTI-HUMAN GLOBULIN REAGENT

Lorne Polyspecific Anti-Human Globulin Elite Clear and Anti-Human Globulin Elite Green reagents contain anti-human IgG derived from rabbits with non-specific activity removed by absorption and mouse monoclonal IgM Anti-C3d, Clone BRIC-8. The antibodies are diluted in a buffered solution containing bovine albumin. These polyspecific reagents are supplied at optimal dilution, for use by spin tube technique.

Item	Product Code	Size	Maximum Shelf Life
A.H.G Elite (Clear)	415010	10ml	24 Months
A.H.G Elite (Green)	435010	10ml	24 Months

MONOCLONAL ANTI-C3d REAGENT

Lorne Monoclonal IgM Anti-C3d blood grouping reagent contains mouse monoclonal Anti-C3d, Clone BRIC-8. The reagent is supplied at optimal dilution, for use by direct tube technique.

Item	Product Code	Size	Maximum Shelf Life
Anti-C3d Monoclonal	427002	2ml	24 Months

All products available in bulk quantites

ENZYMES AND POTENTIATORS

Lorne Phosphate Buffered Saline Tablets provide a safe, standardised saline solution for transfusion serology. Each tablet makes 1 litre of solution.

Item	Product Code	Size	Maximum Shelf Life
Buffered Saline Tablets	490025	25	24 Months
	490250	250	24 Months

Lorne Papenzyme-plus reagent is a ready to use liquid preparation of stabilised papain. The reagent is standardised by serological methods for use in blood group antibody investigations. The reagent is supplied at optimal dilution for use by tube technique.

Papenzyme-plus	441010	10ml	12 Months

Lorne Bromelite reagent is a ready to use liquid preparation of stabilised bromelin. The reagent is standardised by serological methods for use in blood group antibody investigations. The reagent is supplied at optimal dilution for use by tube technique.

Bromelite	443010	10ml	12 Months

Lorne LISS Concentrate is a solution of glycine, phosphate buffer and 0.3 M sodium chloride. The solution is supplied at a stronger concentration than needed for serological use. It must be diluted 10 times in de-ionised water before being used by all recommended techniques in the pack insert.

LISS Concentrate	460500	500ml	24 Months
	460025	2500ml	24 Months

Lorne LISS ready for use is a low ionic strength solution containing glycine, sodium chloride and phosphate buffer. The reagent is supplied at the optimal dilution ready for use by all recommended techniques in the pack insert.

LISS Ready for use	470020	20 x 250ml	12 Months
	470250	4 x 250ml	12 Months
	470025	2500ml	12 Months

Lorne LISS-ADD is a low ionic strength solution containing glycine, sodium chloride, phosphate buffer and bovine albumin. The reagent is supplied at the optimal dilution, for use by all the recommended techniques in the pack insert.

LISS-ADD	480010	10ml	24 Months

Lorne PEG-ADD is a low ionic strength solution contains glycine, a phosphate buffer and polyethylene glycol. The reagent is supplied at optimal dilution for use by all the recommended techniques stated in the pack insert without the need for further dilution or addition.

PEG-ADD	485010	10ml	24 Months

Lorne 22% and 30% Serological Albumin is prepared from a mixture of bovine serum albumin and buffered saline. No artificial avidity enhancers or high molecular weight agglutination potentiators are added to any BSA preparation. None of the BSA reagents contain sodium caprylate. Each BSA reagent is supplied at optimal dilution for use by all recommended techniques in the pack insert.

Serological Albumin 22%	451010	10ml	24 Months
Serological Albumin 30%	452010	10ml	24 Months

All products available in bulk quantites

ACCESSORIES

Item	Product Code	Size
 The Essex Blockfile is a sturdy box for the storage of up to 200 cassette type histology blocks in each box. Delivered flat in packs of 25, they are easily assembled when needed and provide convenient and economical long-term storage for tissue samples. Dimensions – (L) 390mm x (D) 200mm x (H) 45mm		
The 'Essex' Blockfile	882025	25 Boxes
 The Brighton Slidestak is a sturdy box for the storage of over 1000 microscope slides upright in each box. Delivered flat in packs of 25, they are easily assembled and provide convenient and economical long-term storage. Dimensions – (L) 310mm x (D) 170mm x (H) 80mm		
The 'Brighton' Slidestak	881025	25 Boxes
 The Cardtiles are suitable for a wide range of haemagglutination tests. Each card has twenty 30mm square white test sites.		
Cardtiles	880100	100 Cards
 The Mini-Cardtiles are specially laminated cards suitable for VDRL and similar agglutination tests requiring a white background. Each card has ten 20mm diameter white test sites that are slightly compressed to form shallow wells.		
Mini-Cardtiles	880120	25 Cards
 The Latex Cardtiles are suitable for all latex agglutination tests. Each card has six 30mm diameter black reaction sites.		
Latex-Cardtiles	880130	25 Cards
 The mini pipettes are 11.5cm in length with one sealed end. The diameter of the tube is 4mm.		
Mini Pipettes	044000	500
 We use these products in our own production. The 5ml vials are glass and the 10ml vials are plastic. Each vial is supplied with its own dropper. The 10ml vials are supplied in a sterile format in multiples of 1224 while all the other products are supplied individually and require autoclaving.		
Vials and Droppers	LAB00002	5ml
Vials and Droppers	LAB00036	10ml
 We use these products in our own production. They are not branded. We supply flatpacks that hold 5 or 10 vials		
Flatpacks	LAB00027	5 Vial
Flatpacks	LAB00007	10 Vial

All pack inserts are available on **www.lornelabs.com**

RED CELLS - REVERSE GROUPING CELLS

These Grouping Cells are made from red cells that have been washed to remove all traces of blood group antibodies and then resuspended in a preservative solution of buffered saline containing adenine, inosine, chloramphenicol and neomycin sulphate. The preservative solution does not interfere with complement-mediated haemolysis. Each group A_1, A_2 and B vial contains a 2.5-3.0% red cell suspension derived from the blood of a single donor, whereas the group O vial contains a 2.5-3.0% suspension of pooled group O red cells from two donors in equal proportions. Antigens for which the O cells have been typed are noted on the antigen profile accompanying each lot. NB: Some antigens are present on only 50% of the cells in each lot.

Item	Product Code	Size	Minimum Shelf Life
Reverse Grouping A_1 + B Cells	910020	2 x 10ml	30 Days
Reverse Grouping A_1 + A_2 + B Cells	910030	3 x 10ml	30 Days
Reverse Grouping A_1 + A_2 + B + O Cells	910040	4 X 10ml	30 Days
Reverse Grouping A_2 Cells	920002	1 x 10ml	30 Days

RED CELLS – ANTIBODY SCREENING CELLS

Maxi-Screen 3 red cells are for antibody screening. Each reagent vial contains a 2.5-3.0% suspension of red cells derived from the blood of a single group O donor. The donor red cells have been washed to remove blood group antibodies and then resuspended in a preservative solution containing adenine and inosine to help preserve carbohydrate metabolism and chloramphenicol and neomycin sulphate as preservatives.

Item	Product Code	Size	Minimum Shelf Life
Maxi-Screen 3	950030	3 x 10ml	30 Days

RED CELLS – IDENTICELLS

Identicells are made up of 10 vials which each contain a 2.5-3.0% suspension of red cells derived from the blood of a single group O donor. The donor cells have been washed to remove blood group antibodies and then resuspended in a preservative solution containing adenine, inosine, chloramphenicol and neomycin sulphate as preservatives.

Item	Product Code	Size	Minimum Shelf Life
Identicells	960050	10 x 5ml	30 Days

RED CELLS – COOMBS CONTROL CELLS

Coombs Control Cells are made up of a 3.8-4.2% suspension of single donor group O red cells washed to remove all blood group antibodies and then resuspended in a preservative solution. The preservative solution contains neomycin sulphate and chloramphenicol as preservatives. The cells are then sensitised with IgG.

Item	Product Code	Size	Minimum Shelf Life
Coombs Control Cells	970010	10ml	30 Days

Deliveries take place every 28 days.

As well as the standard Red Cell products above, we can also supply other products for special standing orders only. These include 0.8% panels and screening cells for use with column agglutination systems and Papainised red cell panels. Contact us with full details of your requirements for a quotation.

All the above Red Cell products are CE marked and comply with the Red Book.

All pack inserts are available on **www.lornelabs.com**

They are not Lorne labelled products.

RED CELLS PRESERVATIVE – PRESERVACELL

Lorne Preservacell is a phosphate buffered solution containing glucose, calcium chloride and purine bases, with chloramphenicol, gentamycin sulphate and neomycin sulphate as antibiotics. The reagent is supplied at optimal dilution.

Item	Product Code	Size	Maximum Shelf Life
Preservacell	980500	500ml	12 Months

RED CELLS PRESERVATIVE – ABO PRESERVACELL

Lorne ABO Preservacell is a phosphate buffered solution containing glucose, calcium chloride and purine bases, with chloramphenicol, gentamycin sulphate and neomycin sulphate as antibiotics. EDTA is added to stop complement binding so that potent ABO haemolysins act as simple agglutinins. The reagent is supplied at optimal dilution.

Item	Product Code	Size	Maximum Shelf Life
ABO Preservacell	981500	500ml	12 Months

ALSEVERS SOLUTION

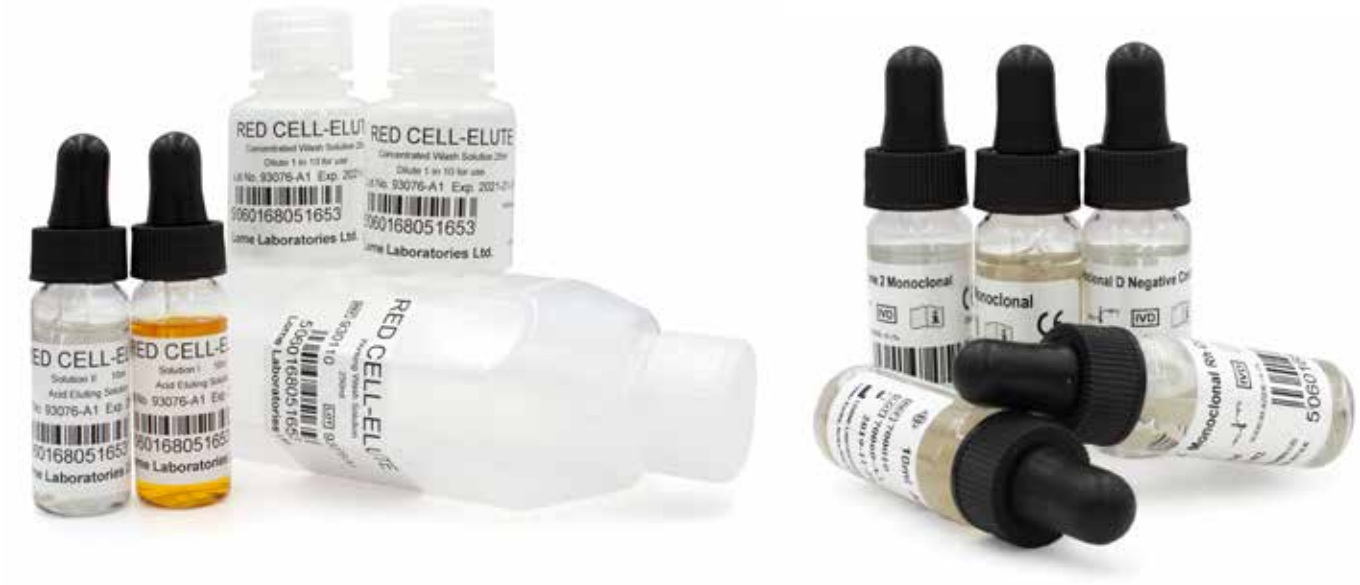
Alsevers Solution is an isotonic, balanced salt solution that is routinely used as an anticoagulant/blood preservative, which permits the storage of whole blood at refrigerator temperatures for approximately 10 weeks. The solution contains antibiotics and other chemicals that ensure maximum viability of stored red cells.

Item	Product Code	Size	Maximum Shelf Life
Alsevers Solution	983000	1000ml	12 Months

RED CELL ELUTE

Lorne Red Cell Elute is an acid elution kit. The kit consists of Concentrated Wash Solution, which is used to minimise antibody dissociation during washing, Acid Eluting Solution, which is a low pH glycine buffer containing a colouring agent and a Base Buffering Solution, Tris solution containing bovine albumin. The Concentrated Wash Solution requires dilution and all the other solutions are supplied at optimal dilution for use by all recommended techniques in the pack insert.

Item	Product Code	Size	Maximum Shelf Life
Red Cell Elute	930110	Kit	30 Months



All products available in bulk quantites

SYPHILIS KITS

Lorne TPHA Kit detects antibodies to *T. pallidum*. Test Cells are preserved avian erythrocytes coated with antigenic components of pathogenic *T. pallidum* (Nichol's strain). Any non-specific reactions are detected using the Control Cells; avian erythrocytes not coated with T. pallidum antigens. Non-specific reactions can also be absorbed out using Control Cells. Antibodies to non-pathogenic treponemes are absorbed by an extract of Reiter's treponemes in the cell suspension. Reagents are supplied at optimal dilution for use by the recommended techniques in the pack insert.

Item	Product Code	Size	Maximum Shelf Life
TPHA Microtitre Plate Kit	043100A	100 Tests	18 Months

The VDRL test is a non-treponemal slide agglutination test for the qualitative and semi-quantitative detection of plasma reagins. The antigen suspension, a lipid complex, is agglutinated when mixed with samples containing reagins of patients affected by syphilis. The reagent is supplied ready to use.

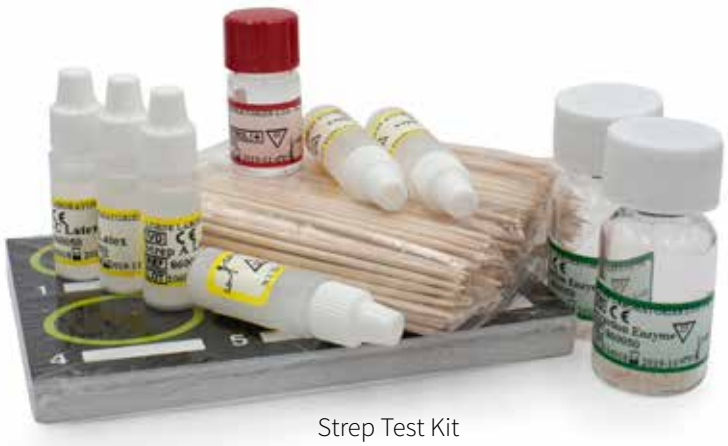
VDRL Stabilised Reagent Kit	046511A	250 Tests	30 Months

RPR Carbon Antigen contains micro particulate carbon, which aids in the microscopic reading of results. Lorne provides reagents, controls and kits. All the reagents are supplied at optimum dilution for use by all recommended techniques without the need for further dilution or addition.

RPR Carbon Antigen	045005A	100 Tests	30 Months
RPR Carbon Positive Control	047001A	1ml	30 Months
RPR Carbon Kit	044150A	150 Tests	30 Months
	044500A	500 Tests	30 Months

RPR Carbon Kit

TPHA Microtitre Plate Kit



Strep Test Kit

All pack inserts are available on **www.lornelabs.com**

LATEX KITS

Lorne ASO Latex Kit is a serologic test for the detection of ASO antibodies. All the reagents are supplied at optimal dilution for use by all recommended techniques in the pack insert.

Item	Product Code	Size	Maximum Shelf Life
ASO Latex Kit	031100A	100 Tests	30 Months

Lorne RF Latex Kit is for the detection of Rheumatoid Factor. The latex reagent is a suspension of latex particles coated with human gamma globulins, which agglutinate in the presence of Rheumatoid Factor. All latex reagents are supplied at optimal dilution for use by all recommended techniques in the pack insert.

RF Latex Kit	830100A	100 Tests	30 Months

Lorne CRP Latex Test Kit is for the detection of CRP. The test reagent consists of latex particles coated with either goat or rabbit Anti-CRP (IgG). All the latex reagents are supplied at optimal dilution for use by all recommended techniques in the pack insert.

CRP Latex Kit	850100A	100 Tests	30 Months

Lorne IM Latex Test Kit is for detection of the heterophile antibody associated with Infectious Mononucleosis. The test reagent consists of latex particles coated with partially purified glycoprotein from bovine red cells. All reagents are supplied at optimal dilution for use by all recommended techniques in the pack insert.

IM Latex Kit	041050A	50 Tests	30 Months

Lorne LE Latex Kit is for the detection of nuclear proteins in Systemic Lupus Erythematosus (SLE or LE). The test reagent consists of DNP coated latex particles. All the reagents are supplied at optimal dilution for use by recommended techniques in the pack insert.

LE Latex Test Kit	840050	50 Tests	24 Months

Lorne Strep Kit is a Latex agglutination grouping kit for the identification of Streptococci of Lancefield groups A, B, C, D, F and G by agglutination of specific antibody coated latex particles in the presence of enzymatically-extracted antigen. All the reagents are supplied at optimal dilution for use by all recommended techniques in the pack insert.

Strep Test Kit	860050	6 x 50 Tests	18 Months

Lorne Staph Kit is a Latex aggulation kit for the identification of *Staph. aureus.* Includes latex reagent, control reagent and agglutination slides. All the reagents are supplied at optimal dilution for use by all recommended techniques in the pack insert.

Staph Test Kit	870050	50 Tests	18 Months
	870100	100 Tests	18 Months

ASO Latex Kit

All products available in bulk quantites

FEBRILE ANTIGENS

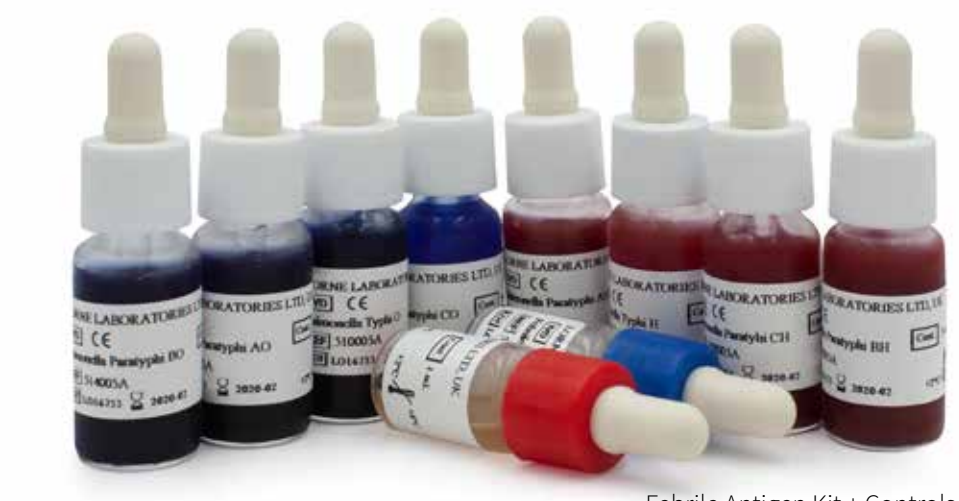
Lorne Stained Febrile Antigens are for the detection of certain Salmonellae, Richettsiae and Brucellae pathogens. The antigens are suspensions of killed bacteria, stained to enhance the reading of agglutination tests. The blue stained antigens are specific to the somatic "O" antigens and the red stained antigens are specific to the flagellar "H" antigens. Suspensions of Proteus OX2, OX19 and OXK are used to detect rickettsial antibodies.
Rose Bengal is a slide agglutination test for the qualitative and semi-quantitative detection of anti-Brucella antibodies in human and animal serum. The stained bacterial suspension agglutinates when mixed with samples containing specific IgG or IgM antibodies present in the patient sample.

Item	Product Code	Size	Maximum Shelf Life
Salmonella Typhi H	502005A	100 Tests	30 Months
Salmonella Paratyphi AH	504005A	100 Tests	30 Months
Salmonella Paratyphi BH	506005A	100 Tests	30 Months
Salmonella Paratyphi CH	508005A	100 Tests	30 Months
Salmonella Typhi O	510005A	100 Tests	30 Months
Salmonella Paratyphi AO	512005A	100 Tests	30 Months
Salmonella Paratyphi BO	514005A	100 Tests	30 Months
Salmonella Paratyphi CO	516005A	100 Tests	30 Months
Brucella Abortus	518005A	100 Tests	30 Months
Brucella Melitensis	520005A	100 Tests	30 Months
Proteus OX2	522005A	100 Tests	30 Months
Proteus OX19	524005A	100 Tests	30 Months
Proteus OXK	526005A	100 Tests	30 Months
Febrile Antigen Kit + Controls	532042A	8x100 Tests and 2x1ml	30 Months
Febrile Positive Control	536001A	1ml	30 Months
Febrile Negative Control	537001A	1ml	30 Months
Rose Bengal	155050A	50 Tests	30 Months

ROSE WAALER

Rose Waaler is a technique of passive haemagglutination for qualitative and semi-quantitative detection of human serum Rheumatoid Factor. Sheep red blood cells are coated with a concentration of antiserum to sheep red blood cells that is too low to cause agglutination. The addition of serum from a patient with Rheumatoid Factor will cause agglutination.

Item	Product Code	Size	Maximum Shelf Life
Rose Waaler	156050A	50 Tests	30 Months



Febrile Antigen Kit + Controls

All pack inserts are available on **www.lornelabs.com**

ABO SYSTEM – MONOCLONAL REAGENTS

Lorne Monoclonal IgM ABO Standard Grade blood grouping reagents contain mouse monoclonal antibodies diluted in a phosphate buffer containing sodium chloride, EDTA and bovine albumin. Each reagent is supplied at optimal dilution for use by slide, tube, gel card and microplate techniques.

Item	Product Code	Size	Maximum Shelf Life
Anti-A Monoclonal - Standard Grade	600010E	10ml	36 Months
Anti-B Monoclonal - Standard Grade	610010E	10ml	36 Months
Anti-A,B Monoclonal - Standard Grade	620010E	10ml	36 Months

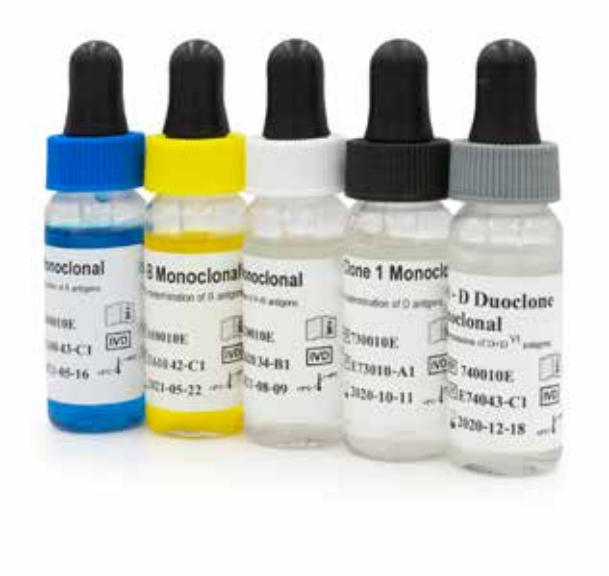
RHESUS SYSTEM – MONOCLONAL REAGENTS

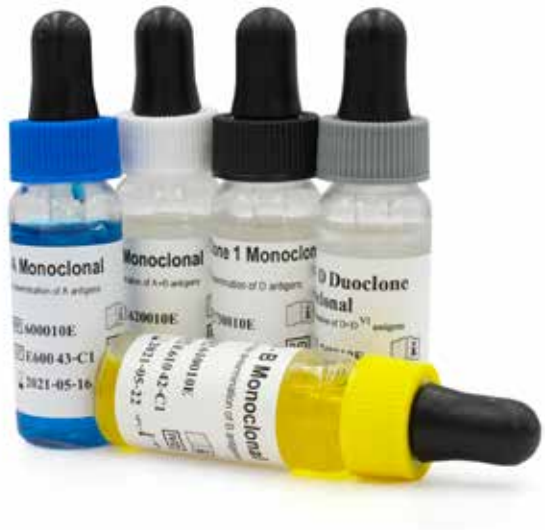
Lorne Monoclonal IgM Anti-D Clone 1 Standard Grade blood grouping reagent is a low protein reagent containing a human monoclonal IgM antibody diluted with sodium chloride, bovine albumin and macromolecular potentiators. When typing patient samples, the reagent will directly agglutinate Rh D positive cells, including the majority of variants (but not D^{VI}) and a high proportion of weak D (D^{u}) phenotypes when using the slide, tube, gel card and microplate techniques.

Item	Product Code	Size	Maximum Shelf Life
Anti-D IgM Monoclonal - Standard Grade	730010E	10ml	30 Months

Lorne Monoclonal Anti-D Duoclone Standard Grade blood grouping reagent is a low protein, blended reagent containing human monoclonal IgM and IgG Anti-D, diluted in a phosphate buffer containing sodium chloride, bovine albumin and macromolecular potentiators. When typing patient samples, this reagent will directly agglutinate Rh D positive cells, including the majority of variants (but not D^{VI}) and a high proportion of weak D (D^{u}) phenotypes when using the slide, tube, gel card and microplate techniques. It will agglutinate D^{VI} cells in the IAT phase of testing.

Anti-D Duoclone Monoclonal - Standard Grade	740010E	10ml	30 Months





All products available in bulk quantites

LORNE
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Published October 2018

IVD In Vitro Diagnostic Medical Device
For professional use only

Hypochlorite solution 0.5%

REF	Name	Packaging size
3917	Hypochlorite solution 0.5%	1000ml

Intended purpose

Hypochlorite solution 0.5% is a non – sterile reagent dedicated for intensive cleaning, rinsing and washing of hematology analyzers (capillaries, tubing, chambers).

Principle

The use of reagents based on sodium hypochlorite is recommended by the manufactures of hematology analyzers to maintain equipment in proper working condition.

Hypochlorite solution 0.5% is cleaning agent “emergency cleaner”, used to remove residual specimen and the remaining reagents contained in the elements of the measuring system of hematology analyzers. It removes any residual cellular, proteinaceous deposits (serum albumins) and the remaining reagents that may appear during the operation of the analyzer.

Specimens (collection and preparation)

Not applicable.

Reagent preparation

This reagent is ready to use and can be applied straight from the bottle, no special reagent preparation is needed unless Operators manual for used instrument include it.

Procedure (instruction for use)*

Due to differences in the rules for implementing the procedures for cleaning in different types of analyzers, Hypochlorite solution 0.5% should be used according to instrument manufacturer`s instructions for use and should be connected as listed in the Operators manual for instrument.

CE

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Tel: +48 32 2392 000

Recommended models of instruments:

Hypochlorite 0.5%	**Model of instrument***
Emergency Cleaner	Abbott Cell-Dyn 1800, 1700, 1600, 1300
	ABX Pentra80, 60, 60C, 60C+, 60MS, ABX Micros 60, ES60, 45
	Benesphera™ H32, Benesphera™ H32 VET
	Beckman Coulter AcT 5™, Beckman Coulter AcT Diff™, AcT Diff 2™, Beckman CoulterAcT 8™, AcT 10™
	Diatron Abacus, Diatron Abacus Junior VET
	Drew Excell 18 (BT2100)
	Erma PCE-210
	Hospitex Hemascreen 18
	HTI Micros CC18
	Medonic CA620-20, CA620-16, CA530-16
	Melet-Schloesing MS9, MS4, MS8, MS8 VET
	Mindray BC-3200, BC-3000 Plus, BC-2800, BC-2300, BC-2000
	Nihon Kohden Celltac™ F MEK-8222K, Celltac ES MEK-7300, Celltac E MEK-7222K, ®Celltac™ α MEK-8118K + QA-810V
	Seac H20 Genius, SEAC H12
	Sysmex K4500, Sysmex K1000, Sysmex KX21, KX21-N

Composition (in water)

Component	**Concentration**
Sodium hypochlorite	< 0,6 %
Sodium hydroxide	< 0,5%
Fragrant	< 0.5 %

Storage and shelf life

Store in temperature 2-30°C.

The shelf life of Hypochlorite solution 0.5% is 18 months from manufacturing date, if stored at the prescribed temperature range.
Do not use reagent beyond the expiration date printed on label.

Warnings and precautions

For in vitro diagnostic use
For professional use only

Hypochlorite solution 0.5% meeting the criteria for classification in accordance with Regulation (EC) No 1272/2008.

CE

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	H315: Causes skin irritation
	H319: Causes serious eye irritation
	H412: Harmful to aquatic life with long lasting effects.
PREVENTION	P264: Wash thoroughly after handling
	P280: Wear protective gloves/protective clothing/eye protection/face protection
	P273: Avoid release to the environment
RESPONSE	P332+P313: If skin irritation occurs: Get medical advice/attention
	P362+P364: Take off contaminated clothing and wash it before reuse
	P337+P313: If eye irritation persists: Get medical advice/attention

For further information please refer to Master Safety Data Sheet.

Limitations of use

Do not use reagents with visible physical or chemical changes (color, turbidity) or in case of direct packaging damage.

Please refer to Operators manual for instrument for information about any additional limitation of use.

*The information contained herein has not been approved by analyzers manufacturers, it is recommendation for use only. Always refer to the user manual provided with the equipment at issue.

Disposal information

Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristic at time of disposal.

Thromboplastin L

REF 5265HL
REF 5265L
REF 5267L

CE IVD

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HL-2-3035P 2015/10 (1)

Thromboplastin L
Instructions for use — en

INTENDED PURPOSE

The Thromboplastin L kit is intended for carrying out clot based haemostasis assays.

The first standardised one-stage prothrombin time test was developed by Dr. Armand Quick in 1935. It has now become the basic coagulation screening test for the diagnosis of congential and acquired deficiencies of clotting factors from the extrinsic pathway (factors II, V, VII and X)[1,2]. It is also used for the induction and monitoring of oral anticoagulant therapy[3,4] and can be used to assess the protein synthesis capability of the liver in chronic or acute hepatic disorders.
Thromboplastin L is of rabbit brain origin but resembles human preparations in its low International Sensitivity Index (ISI). The ISI of Thromboplastin L is approximately 1.1 and is calibrated against the WHO international reference preparation[5]. Thromboplastin L is particularly suited to the monitoring of oral anticoagulant therapy and, in conjunction with the appropriate factor deficient plasma, the measurement of factor activity in the extrinsic pathway. Tissue thromboplastin, in the presence of calcium ions, is an activator which initiates the extrinsic pathway of coagulation. When a mixture of tissue thromboplastin and calcium ions is added to normal citrated plasma, the clotting mechanism is activated, leading to a fibrin clot. If a deficiency exists within the extrinsic pathway, the time required for clot formation will be prolonged depending on the severity of the deficiency.

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

Composition	Content	Description	Preparation
Thromboplastin L	2 x 5 mL (REF 5265HL) 8 x 5 mL (REF 5265L) 10 x 10 mL (REF 5267L)	Liquid Rabbit Brain Thromboplastin containing Calcium Chloride, stabilisers and preservatives.	The liquid, calcified thromboplastin is ready-for-use. No further calcium is required to carry out standard PT Assays. The contents of the vial should be mixed well before use. (5 minutes on roller).
Each kit contains Instructions For Use.			
Each kit contains lot specific reference values insert.			

ITEMS REQUIRED BUT NOT PROVIDED

The below products can be used in conjunction with Thromboplastin L:

REF 5519	ISI Calibrant Plasma Set
REF 5490	INR Reference Set

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.

Thromboplastin L	Opened vials are stable for 2 months at $^{+}$2 – $^{+}$8°C, 5 days at $^{+}$15°C (on-board Sysmex CA-1500) and 6 hours at $^{+}$37°C (on-board AC-4 including reagent container and cap). A shift-use stability of 7 days (Sysmex CA-1500) can be achieved. DO NOT FREEZE. Large clumps of particles or changes in expected values may indicate product deterioration.

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 $^{+}$18 –$^{+}$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[6].

PROCEDURE

For accurate INR reporting, it is recommended to determine the laboratory specific ISI of the reagent with the testing system in use. The Helena Biosciences Europe ISI Calibrant Plasma Set (REF 5519) is recommended for this purpose[7,8]. This should be performed for each new reagent batch. The Helena Biosciences Europe INR Reference Set (REF 5490) should be used to check for shifts in the local system ISI which have been noted with changes in laboratory temperature and post instrument servicing, amongst other local variances.

Manual Method

1. Mix sufficient Thromboplastin L to complete the anticipated testing for the day and incubate at $^{+}$37°C for no more than 4 hours.
2. Pre-warm 0.1 mL of the test plasma at $^{+}$37°C for 2 minutes.
3. Add 0.2 mL of freshly mixed thromboplastin reagent to the plasma while simultaneously starting a stopwatch.
4. Note the time for clot formation to the nearest 0.1 seconds.

Automated Method

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

INTERPRETATION OF RESULTS

Results should be reported to the nearest 0.1 seconds and duplicates should agree within 5% of each other. %PT values can be interpolated from the calibration graph (%PT of PT Calibration plasmas versus measured clot time), which should be a straight line when plotted on log-log graph paper.

INR values can be calculated using the following formula: INR = (PT Time Patient / Mean Normal PT Time)^{ISI}

For clear guidance on the indications for and management of patients on warfarin, please refer to The British Society for Haematology, for their most current edition of 'Guidelines on oral anticoagulation with warfarin'. At time of printing this is the 2011 fourth edition[9].

LIMITATIONS

The use of serial dilutions of a reference plasma for the %PT curve is not recommended as this can lead to discrepancies caused by the low fibrinogen in the reference plasma dilutions which are not reflected in patient samples having predominantly normal fibrinogen levels. Helena Biosciences Europe advise use of the 5504R %PT/Direct INR kit for this purpose.

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 5490	INR Reference Set

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. This is particularly important for local ISI calibration. Using the Sysmex series of instruments, normal values ranging from 11.50 - 14.60 seconds; 0.930 - 1.160 INR; 79.10 - 112.80 %PT are typical.

PERFORMANCE CHARACTERISTICS

The following performance characteristics have been determined by Helena Biosciences Europe or their representatives using a Sysmex CA-1500 coagulation instrument. Each laboratory should establish its own performance data.

Reproducibility

Sample	Routine Control N		Routine Control A		Routine Control SA	
	SD	*CV (%)*	*SD*	*CV (%)*	*SD*	*CV (%)*
Repeatability	0.07	0.59	0.24	1.09	0.45	1.11
Between-run	0.10	0.83	0.16	0.75	0.49	1.20
Between-day	0.04	0.32	0.06	0.27	0.25	0.62
Within-device / Laboratory	0.12	1.07	0.29	1.35	0.72	1.75

Interferences

Helena Thromboplastin L is insensitive to Heparin levels of up to 2 U/mL. Using a 5% interference threshold, there is no significant interference from Haemoglobin at concentrations up to 10 g/L. Using a 5% interference threshold, there is no significant interference from Bilirubin at concentrations up to 0.5 g/L for Thromboplastin L. Lipid interference testing demonstrates that lipid levels do not directly affect the clot time of the reagent up to 3.75g/L. Lipid concentrations in excess of this prevent clot detection.

Method Comparison

Comparison of clot time in seconds and INR values were determined using Thromboplastin L and Thromboplastin LI on 268 samples. The following correlations were obtained:

Thromboplastin L (Seconds) = 0.9911x + 0.1038	r^2 = 0.9941	n = 268
Thromboplastin L (INR) = 0.9853x + 0.0261	r^2 = 0.9500	n = 268

BIBLIOGRAPHY

1. Quick AJ (1935) A Study of the Coagulation Defect in Hemophilia and Jaundice, *Am. J. Med. Sci,* **190:** 501.
2. Biggs R (1976) Human Blood Coagulation, Haemostasis and Thrombosis, 2nd Edition, Blackwell Scientific Publications, London.
3. Hirsh J, Poller L, Deykin D, Levine J, Dalen JE (1989) Optimal Therapeutic Range for Oral Anticoagulants, *Chest,* **95:** 5S-11S.
4. Poller L (1986) Laboratory Control of Anticoagulant Therapy, *Sem. Thromb. Haemostasis,* **12:** 13-19.
5. World Health Organisation (1984) Expert Committee on Biological Standards, *Technical Series,* **700:** 19.
6. Clinical and Laboratory Standards Institute (2008) Collection, Transport and Processing of Blood Specimens for Testing Plasma-Based Coagulation Assays and Molecular Haemostasis Assays: Approved Guideline, 5th edn. CLSI: H21-A5.
7. Poller L., Triplett DA, Hirsh J, Carroll J, Clarke K (1995) The value of plasma calibrants in correcting coagulometer effects on International Normalised Ratios (INR): An international multicentre study, *Amer. J. Clin. Pathol,* **103:** 358-365.
8. Poller L, Triplett DA, Hirsh J, Carroll J, Clarke K (1995) A comparison of lyophilised artificially depleted plasmas and lyophilised plasmas from warfarin treated patients in correcting for coagulometer effects on International Normalised Ratios, *Amer. J. Clin. Pathol*, **103:** 366-371.
9. Keeling D (2011) Guidelines on Oral Anticoagulation with warfarin: Forth Edition, *British Journal of Haematology,* **154(3):** 311-324.

Thromboplastin L
Fiche technique — fr

UTILISATION

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

La première méthode de détermination standardisée du temps de prothrombine en une étape a été développée en 1935 par le Dr. Armand Quick. Cette méthode de Quick constitue désormais l'analyse de base de la coagulation servant à diagnostiquer des anomalies des facteurs de coagulation, congénitales ou acquises, à partir de la voie extrinsèque (facteurs II, V, VII et X)[1,2]. Elle sert aussi à l'induction et au monitorage des thérapies avec anticoagulants oraux[3,4] et elle peut être utilisée pour évaluer la capacité de synthèse des protéines du foie chez les patients souffrants de troubles hépatiques chroniques ou aigus.
Le Thromboplastin L provient de cerveaux de lapin mais il ressemble au BCT humain en raison de son indice de sensibilité international (ISI) faible. L'ISI du Thromboplastin L est d'environ 1,1 et est étalonné en comparaison avec la préparation internationale de référence de l'OMS[5]. Le Thromboplastin L convient tout particulièrement au monitorage des thérapies avec anticoagulants oraux et, utilisé conjointement au plasma carencé en un facteur approprié, à la détermination de l'activité du facteur de la voie extrinsèque. La thromboplastine tissulaire, en présence d'ions calcium, est un activateur qui démarre la voie extrinsèque de la coagulation. Quand un mélange de thromboplastine tissulaire et d'ions calcium est ajouté à un plasma citraté normal, le processus de coagulation, qui doit conduire à la production d'un caillot fibreux, s'active. Si la voie extrinsèque présente une anomalie, le temps nécessaire à la formation du caillot est allongé suivant la gravité du trouble de la coagulation.

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 églementations locales.

COMPOSITION

Composant	Contient	Description	Préparation
Thromboplastin L	2 x 5 mL (REF 5265HL) 8 x 5 mL (REF 5265L) 10 x 10 mL (REF 5267L)	Thromboplastine liquide de cerveau de lapin contenant du chlorure de calcium, des stabilisateurs et des conservateurs.	La thromboplastine liquide calcifiée est prête à l'emploi. Aucun calcium supplémentaire n'est nécessaire pour réaliser des déterminations standard du TP. Le contenu du flacon doit être bien mélangé avant utilisation (5 minutes sur un mélangeur à rouleaux).
Chaque kit contient une fiche technique.			
Chaque kit contient valeurs de référence spécifiques du lot.			

MATÉRIEL NÉCESSAIRE NON FOURNI

Les produits ci-dessous peuvent être utilisés en conjonction avec la Thromboplastin L :

REF 5519	ISI Calibrant Plasma Set
REF 5490	INR Reference Set

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.

Thromboplastin L	Les flacons ouverts sont stables pendant 2 mois à $^{+}$2 °C – $^{+}$8 °C, pendant 5 jours à $^{+}$15 °C (à bord du Sysmex CA-1500) et pendant 6 heures à $^{+}$37 °C (à bord de l'AC-4, récipient de réactif et capuchon inclus). Il est possible d'obtenir une stabilité de période de travail de 7 jours (Sysmex CA-1500). NE PAS CONGELER. La présence de d'amas de particules ou un écart par rapport aux valeurs prévues indique une détérioration du produit.

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 $^{+}$18 –$^{+}$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[6].

PROCÉDURE

Pour obtenir un RNI (rapport normalisé international) précis, il est recommandé à chaque laboratoire de déterminer l'ISI spécifique du réactif avec le système d'analyse utilisé. Il est conseillé d'utiliser le ISI Calibrant Plasma Set Helena Biosciences Europe (REF 5519) pour cela[7,8]. Cette opération doit être réalisée pour chaque nouveau lot de réactif. Le kit RNI de référence Helena Biosciences Europe (REF 5490) doit être utilisé pour vérifier l'existence d'un décalage de l'ISI du système local déterminé en raison d'une variation de la température du laboratoire, suite à une opération de maintenance réalisée sur l'instrument ou toute autre variable locale.

Méthode Manuelle

1. Mélanger du Thromboplastin L en quantité suffisante pour réaliser les analyses prévues dans la journée et incuber à $^{+}$37 °C pendant 4 heures au maximum.
2. Préchauffer 0,1 mL de plasma à $^{+}$37°C pendant 2 minutes.
3. Ajouter 0,2 mL de réactif de thromboplastine fraîchement mélangé au plasma et démarrer à ce moment un chronomètre.
4. Relever le temps de formation du caillot en arrondissant au dixième de seconde.

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 doivent être indiqués en arrondissant au dixième de seconde et l'écart maximal entre eux est de 5%. Il est possible d'interpoler les valeurs de %TP à partir de la courbe d'étalonnage (%TP des plasmas d'étalonnage du TP par rapport au temps de coagulation mesuré), qui doit correspondre à une ligne droite quand elle est représentée sur du papier logarithmique.

La formule suivante permet de calculer les valeurs du RNI: RNI = (Temps TP patient / Temps TP moyen normal)^{ISI}

Pour obtenir des informations claires quant aux indications et à la prise en charge des patients sous warfarine, consulter la British Society for Haematology pour obtenir la dernière édition des Guidelines on oral anticoagulation with warfarin (Recommandations relatives à l'anticoagulothérapie orale avec la warfarine). Au moment de l'impression du présent document, il s'agit de la quatrième édition de 2011[9].

LIMITES

Il est déconseillé de réaliser des dilutions du plasma de référence pour la courbe de %TP, car cela risquerait d'entraîner des divergences dues au faible taux de fibrinogène présent dans les dilutions du plasma de référence, ce qui ne serait pas représentatif des échantillons patients qui ont principalement des taux de fibrinogène normaux. Helena Biosciences Europe conseille l'utilisation du kit 5504R %PT/Direct INR dans ce but.

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 5490	INR Reference Set

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. Ceci est particulièrement important pour l'étalonnage de l'ISI local. Avec les instruments de la série Sysmex, l'intervalle type des valeurs normales est de 11,50 - 14,60 secondes; 0.930 - 1.160 INR; 79.10 - 112.80 %PT .

CARACTÉRISTIQUES DE PERFORMANCES

Helena Biosciences Europe ou ses mandataires ont déterminé les caractéristiques de performance suivantes en utilisant un instrument de coagulation Sysmex CA-1500. Chaque laboratoire doit établir ses propres données de performance.

Reproductibilité

Échantillon	Routine Control N		Routine Control A		Routine Control SA	
	SD	*CV (%)*	*SD*	*CV (%)*	*SD*	*CV (%)*
Répétabilité	0,07	0,59	0,24	1,09	0,45	1,11
Inter-séries	0,10	0,83	0,16	0,75	0,49	1,20
Inter-jours	0,04	0,32	0,06	0,27	0,25	0,62
Intra-dispositif/laboratoire	0,12	1,07	0,29	1,35	0,72	1,75

Interférences

Thromboplastin L (ISI faible) d'Helena ne présente pas d'interférences avec un taux d'héparine jusqu'à 2 U/mL. En utilisant un seuil d'interférence de 5 %, il n'y a pas d'interférences significatives de l'hémoglobine à une concentration jusqu'à 10 g/L. En utilisant un seuil d'interférence de 5 %, il n'y a pas d'interférences significatives de la bilirubine à une concentration jusqu'à 0,5 g/L pour la Thromboplastin L. Une évaluation de l'interférence des lipides montre que les taux de lipides n'affectent pas le temps de coagulation du réactif jusqu'à 3,75 g/L. Une concentration en lipides dépassant cette limite empêche la détection du caillot.

Comparaison de la méthode

Des comparaisons du temps de coagulation en secondes et en valeurs de RNI ont été déterminées en utilisant les produits Thromboplastin L et Thromboplastin LI avec 268 échantillons. Les corrélations suivantes ont été obtenues:

Thromboplastin L (seconde) = 0,9911x + 0,1038	r^2 = 0,9941	n = 268
Thromboplastin L (INR) = 0,9853x + 0,0261	r^2 = 0,9500	n = 268

BIBLIOGRAPHIE

1. Quick AJ (1935) A Study of the Coagulation Defect in Hemophilia and Jaundice, *Am. J. Med. Sci,* **190:** 501.
2. Biggs R (1976) Human Blood Coagulation, Haemostasis and Thrombosis, 2nd Edition, Blackwell Scientific Publications, London.
3. Hirsh J, Poller L, Deykin D, Levine J, Dalen JE (1989) Optimal Therapeutic Range for Oral Anticoagulants, *Chest,* **95:** 5S-11S.
4. Poller L (1986) Laboratory Control of Anticoagulant Therapy, *Sem. Thromb. Haemostasis,* **12:** 13-19.
5. World Health Organisation (1984) Expert Committee on Biological Standards, *Technical Series,* **700:** 19.
6. Clinical and Laboratory Standards Institute (2008) Collection, Transport and Processing of Blood Specimens for Testing Plasma-Based Coagulation Assays and Molecular Haemostasis Assays: Approved Guideline, 5th edn. CLSI: H21-A5.
7. Poller L., Triplett DA, Hirsh J, Carroll J, Clarke K (1995) The value of plasma calibrants in correcting coagulometer effects on International Normalised Ratios (INR): An international multicentre study, *Amer. J. Clin. Pathol,* **103:** 358-365.
8. Poller L, Triplett DA, Hirsh J, Carroll J, Clarke K (1995) A comparison of lyophilised artificially depleted plasmas and lyophilised plasmas from warfarin treated patients in correcting for coagulometer effects on International Normalised Ratios, *Amer. J. Clin. Pathol*, **103:** 366-371.
9. Keeling D (2011) Guidelines on Oral Anticoagulation with warfarin: Forth Edition, *British Journal of Haematology,* **154(3):** 311-324.

Thromboplastin L
Anleitung — de

VERWENDUNGSZWECK

Das Thromboplastin L Kit ist für koagulometrische Gerinnungstests vorgesehen.

Die erste standardisierte Prothrombinzeit als Einstufen-Test wurde 1935 von Dr. Armand Quick entwickelt. Mittlerweile ist er der Standard-Screeningtest in der Gerinnung zur Diagnose eines vererbten oder erworbenen Gerinnungsfaktormangels des extrinsischen Systems (Faktor II, V, VII und X)[1,2]. Er wird auch zur Einstellung und Überwachung von oralen Antikoagulanztherapien[3,4] verwendet und kann bei chronischen und akuten Lebererkrankungen zur Beurteilung der Funktionsfähigkeit der Leber bei der Proteinsynthese herangezogen werden.
Thromboplastin L wird aus Kaninchenhirn gewonnen, ähnelt aber mit seinem niedrigen „International Sensitivity Index" (ISI) humaner Blutgerinnungszeit. Der ISI von Thromboplastin L liegt bei ca. 1,1 und ist gegen WHO „International Reference Preparation" kalibriert[5]. Thromboplastin L ist besonders für die Überwachung oraler Antikoagulanztherapien geeignet und, in Verbindung mit dem entsprechenden Faktor-Mangelplasma, bei der Messung von Faktoraktivitäten im extrinsischen System. Gewebethromboplastin ist in Anwesenheit von Calcium-Ionen ein Aktivator, der das extrinsische Gerinnungssystem auslöst. Gibt man eine Mischung von Gewebethromboplastin und Calcium-Ionen zu normalem Citratplasma, wird die Gerinnungskaskade aktiviert und es bildet sich ein Fibringerinnsel. Besteht innerhalb des extrinsischen Systems ein Mangel, verlängert sich, je nach Schwere dieses Mangels, die Zeit bis zur Ausbildung eines Gerinnsels.

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
Thromboplastin L	2 x 5 mL (REF 5265HL) 8 x 5 mL (REF 5265L) 10 x 10 mL (REF 5267L)	Flüssiges Thromboplastin aus Hasenhirn mit Calciumchlorid, Stabilisatoren und Konservierungsstoffen.	Das flüssige, kalzifizierte Thromboplastin ist einsatzbereit. Für die Durchführung von standardmäßigen PT-Analysen ist kein zusätzliches Calcium erforderlich. Der Inhalt der Ampulle muss vor der Verwendung gut gemischt werden (5 Minuten auf dem Walzenmischer).
Jedes Kit enthält eine Gebrauchsanweisung			
Jedes Kit enthält chargenspezifischen Referenzwerten			

ERFORDERLICHE, ABER NICHT MITGELIEFERTE ARTIKEL

Die folgenden Produkte können in Kombination mit Thromboplastin L verwendet werden:

REF 5519	ISI Calibrant Plasma Set
REF 5490	INR Reference Set

LAGERUNG, HALTBARKEIT UND STABILITÄT

Ungeöffnete Reagenzien sind unter den auf Verpackung oder Fläschchen angegebenen Lagerbedingungen bis zum aufgedruckten Verfallsdatum stabil.

Thromboplastin L	Offene Ampullen sind 2 Monate bei $^{+}$2 –$^{+}$8°C, 5 Tage bei $^{+}$15°C (im Sysmex CA-1500) und 6 Stunden bei $^{+}$37°C (im AC-4 mit Reagenzbehälter und Deckel) stabil. Eine Stabilität von 7 Tagen im Schichteinsatz (Sysmex CA-1500) kann erreicht werden. NICHT EINFRIEREN. Große Verklumpungen oder Veränderungen in den Normalwerten können auf eine Verfall des Produkts hinweisen.

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 $^{+}$18 –$^{+}$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[6].

VORGEHENSWEISE

Um einen korrekten INR zu erhalten wird empfohlen, den laborspezifischen ISI für das Reagenz mit dem verwendeten Testsystem zu bestimmen. Helena Biosciences Europe empfiehlt zu diesem Zweck das Plasma-Kalibrator-Set REF 5519[7,8]. Das sollte mit jeder neuen Reagenzien-Charge durchgeführt werden. Das Helena Biosciences Europe INR Reference Set (REF 5490) dient zur Überprüfung von Verschiebungen im ISI vor Ort, die unter anderem durch Veränderungen der Labortemperatur und nach Wartungsarbeiten an den Geräten festgestellt worden sind.

Manuelle Methode

1. Mischen Sie eine ausreichende Menge von Thromboplastin L an, um die für den Tag geplanten Tests durchzuführen und inkubieren Sie es nicht länger als 4 Stunden bei $^{+}$37°C.
2. 0,1 mL des zu testenden Plasmas bei $^{+}$37°C 2 Minuten vorwärmen.
3. 0,2 mL des frisch zubereiteten Thromboplastin-Reagenz zum Plasma pipettieren, dabei gleichzeitig Stoppuhr drücken.
4. Die Zeit bis zur Gerinnselbildung bis auf 0,1 Sekunden genau stoppen.

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

Ergebnisse sollten bis auf 0,1 Sekunden genau gemessen werden und Doppelbestimmungen nicht mehr als 5% abweichen. % TPZ-Werte können ausgehend von der Kalibratorkurve interpoliert werden (% TPZ des TP-Kalibrationsplasmas zu gemessener Gerinnungszeit) und sollten auf doppeltlogarithmischem Millimeterpapier eine gerade Linie ergeben.

INR-Werte können anhand der folgenden Formel berechnet werden: INR = (PT Zeit Patient / Mittelwert normale TPZ)^{ISI}

Für klare Leitlinien zu den Indikationen für und der Versorgung von Patienten unter Warfarin siehe die aktuelle Ausgabe der "Guidelines on oral anticoagulation with warfarin" der British Society for Haematology. Zum Zeitpunkt der Drucklegung ist das die 4. Ausgabe, 2011[9].

EINSCHRÄNKUNGEN

Die Verwendung einer Serienverdünnung von Referenzplasma ist für die %PT-Kurve nicht zu empfehlen, da das zu Diskrepanzen aufgrund von niedrigem Fibrinogen in den Referenzplasma-Verdünnungen führen kann, das nicht den Patientenproben entspricht, die in der Regel normale Fibrinogen-Werte haben. Helena Biosciences Europe empfiehlt zu diesem Zweck das Set 5504R %PT/Direct INR einzusetzen.

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 5490	INR Reference Set

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. Dieses ist besonders für die ISI-Kalibration vor Ort wichtig. Mit der Instrumentenreihe Sysmex liegen die typischen Normwerte zwischen 11,50 - 14,60 Sekunden; 0.930 - 1.160 INR; 79.10 - 112.80 %PT .

LEISTUNGSMERKMALE

Die folgenden Leistungseigenschaften wurden von Helena Biosciences Europe oder in ihrem Auftrag mit einem Sysmex CA-1500 Gerinnungsgerät ermittelt. Jedes Labor muss seine eigenen Werte ermitteln.

Reproduzierbarkeit

Probe	Routine Control N		Routine Control A		Routine Control SA	
	SD	*CV (%)*	*SD*	*CV (%)*	*SD*	*CV (%)*
Wiederholbarkeit	0,07	0,59	0,24	1,09	0,45	1,11
Bei verschiedenen Analysen	0,10	0,83	0,16	0,75	0,49	1,20
An verschiedenen Tagen	0,04	0,32	0,06	0,27	0,25	0,62
Selbes Gerät/Labor	0,12	1,07	0,29	1,35	0,72	1,75

Störungen

Helena Thromboplastin L ist unempfindlich gegenüber Heparinwerten bis zu 2 Einheiten/mL. Mit einer Störschwelle von 5 % gibt es keine besondere Interferenz durch Hämoglobin bei Konzentrationen von bis zu 10 g/l. Mit einer Störschwelle von 5 % gibt es keine besondere Interferenz durch Bilirubin bei Konzentrationen von bis zu 0,5 g/l bei Thromboplastin L. Lipidinterferenztests zeigen, dass die Lipidmenge die Gerinnungszeit des Reagenz bis 3,7 g/l nicht direkt beeinflusst. Höhere Lipidkonzentrationen verhindern die Gerinnungserkennung.

Methodenvergleich

Thromboplastin L und Thromboplastin LI wurden an 268 Proben angewandt. Dabei wurden die Gerinnungszeit in Sekunden verglichen und die INR-Werte bestimmt. Es ergaben sich folgende Korrelationen:

Thromboplastin L (sekunden) = 0,9911x + 0,1038	r^2 = 0,9941	n = 268
Thromboplastin L (INR) = 0,9853x + 0,0261	r^2 = 0,9500	n = 268

LITERATURVERZEICHNIS

1. Quick AJ (1935) A Study of the Coagulation Defect in Hemophilia and Jaundice, *Am. J. Med. Sci,* **190:** 501.
2. Biggs R (1976) Human Blood Coagulation, Haemostasis and Thrombosis, 2nd Edition, Blackwell Scientific Publications, London.
3. Hirsh J, Poller L, Deykin D, Levine J, Dalen JE (1989) Optimal Therapeutic Range for Oral Anticoagulants, *Chest,* **95:** 5S-11S.
4. Poller L (1986) Laboratory Control of Anticoagulant Therapy, *Sem. Thromb. Haemostasis,* **12:** 13-19.
5. World Health Organisation (1984) Expert Committee on Biological Standards, *Technical Series,* **700:** 19.
6. Clinical and Laboratory Standards Institute (2008) Collection, Transport and Processing of Blood Specimens for Testing Plasma-Based Coagulation Assays and Molecular Haemostasis Assays: Approved Guideline, 5th edn. CLSI: H21-A5.
7. Poller L., Triplett DA, Hirsh J, Carroll J, Clarke K (1995) The value of plasma calibrants in correcting coagulometer effects on International Normalised Ratios (INR): An international multicentre study, *Amer. J. Clin. Pathol,* **103:** 358-365.
8. Poller L, Triplett DA, Hirsh J, Carroll J, Clarke K (1995) A comparison of lyophilised artificially depleted plasmas and lyophilised plasmas from warfarin treated patients in correcting for coagulometer effects on International Normalised Ratios, *Amer. J. Clin. Pathol*, **103:** 366-371.
9. Keeling D (2011) Guidelines on Oral Anticoagulation with warfarin: Forth Edition, *British Journal of Haematology,* **154(3):** 311-324.

Thromboplastin L
Istruzioni per l'uso

it

SCOPO PREVISTO

III kit Thromboplastin L è concepito per l'esecuzione di dosaggi di emostasi basati sulla presenza di coaguli.

I primo test del tempo di protrombina standardizzato venne messo a punto dal Dr. Armand Quick nel 1935. Attualmente, questo test è diventato il metodo basilare di screening della coagulazione per la diagnosi di deficienze congenite ed acquisite dei fattori di coagulazione dal percorso estrinseco (fattori II, V, VII e X)[1,2]. Questo test viene utilizzato anche per l'induzione e il monitoraggio della terapia anticoagulante orale[3,4] e può essere impiegato per valutare la capacità di sintesi proteica del fegato in disordini epatici cronici o acuti.
Il kit Thromboplastin L è realizzato a partire da cervello di coniglio, ma rassomiglia a BCT umano in termini di basso indice di sensibilità internazionale (ISI). L'ISI del kit Thromboplastin L è approssimativamente pari a 1,1 ed è calibrato rispetto alla preparazione di riferimento internazionale dell'OMS[5]. Il kit Thromboplastin L è particolarmente indicato per il monitoraggio della terapia anticoagulante orale e, in combinazione con plasma carente del fattore appropriato, per la misurazione dell'attività del fattore nel percorso estrinseco. In presenza di ioni di calcio, la tromboplastina tissutale è un attivatore che dà inizio al percorso di coagulazione estrinseco. Quando una miscela di tromboplastina tissutale e di ioni di calcio viene aggiunta a normale plasma citrato, si attiva il meccanismo di coagulazione che porta alla formazione di un coagulo di fibrina. Qualora sussista una deficienza all'interno del percorso estrinseco, il tempo richiesto per la formazione del coagulo risulterà prolungato in funzione della gravità della deficienza.

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 i relativi simboli 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
Thromboplastin L	2 x 5 mL (REF 5265HL) 8 x 5 mL (REF 5265L) 10 x 10 mL (REF 5267L)	Tromboplastina liquida di cervello di coniglio contenente cloruro di calcio, stabilizzatori e conservanti.	La tromboplastina calcica liquida è pronta all'uso. Per eseguire dosaggi PT standard non è necessario altro calcio. Il contenuto della fiala deve essere miscelato accuratamente prima dell'uso (5 minuti su un rullo).

Ogni kit contiene un Istruzioni per l'uso.

Ogni kit contiene un inserto recante i valori di riferimento specifici per il lotto.

MATERIALI NECESSARI, MA NON IN DOTAZIONE

In combinazione con la Thromboplastin L è possibile utilizzare i seguenti prodotti:

REF 5519	ISI Calibrant Plasma Set
REF 5490	INR Reference Set

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

Thromboplastin L — Le fiale aperte sono stabili per 2 mesi ad una temperatura compresa tra $^{+}$2 e $^{+}$8°C, per 5 giorni a $^{+}$15°C (Sysmex CA-1500 on-board) e per 6 ore a $^{+}$37°C (AC-4 on-board compresi il contenitore del reagente e il tappo). È possibile ottenere una stabilità d'uso di 7 giorni (Sysmex CA-1500).
NON CONGELARE. Ammassi consistenti di particelle o variazioni nei valori previsti possono essere indice di deterioramento del prodotto.

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 $^{+}$18 –$^{+}$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[6].

PROCEDURA

Per un rilevamento accurato dell'INR si raccomanda di determinare l'ISI specifico del laboratorio per il reagente con il sistema di test in uso. A tale scopo si raccomanda il ISI Calibrant Plasma Set (REF 5519) di Helena Biosciences Europe[7,8]. Questa procedura deve essere eseguita per ogni nuovo lotto di reagente. L'INR Reference Set (REF 5490) di Helena Biosciences Europe deve invece essere utilizzato per rilevare eventuali spostamenti dell'ISI del sistema locale osservati in concomitanza con cambiamenti della temperatura del laboratorio e in seguito a manutenzione dello strumento, tra le altre variazioni locali.

Metodo Manuale

1. Miscelare un quantitativo di Thromboplastin L sufficiente a completare i test previsti per la giornata e incubare a +37°C per un massimo di 4 ore.
2. Preriscaldare 0,1 mL di plasma di prova a $^{+}$37°C per 2 minuti.
3. Aggiungere al plasma 0,2 mL di reagente a base di tromboplastina appena miscelato, azionando contemporaneamente un cronometro.
4. Annotare il tempo di formazione del coagulo con un'approssimazione a 0,1 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 devono essere indicati con un'approssimazione a 0,1 secondi e le ripetizioni devono corrispondere con una tolleranza del 5%. I valori di %PT possono essere interpolati dal grafico di calibrazione (%PT dei plasmi di calibrazione PT vs. tempo di coagulazione rilevato), che, se tracciato su carta a doppia scala logaritmica, deve apparire sotto forma di linea retta.

I valori di INR possono essere calcolati utilizzando la seguente formula: INR = (Tempo di PT Paziente / Tempo di PT normale medio)^{ISI}

Per una guida chiara sulle indicazioni per la gestione dei pazienti con warfarina fare riferimento a The British Society for Haematology per la loro edizione più aggiornata delle 'Linee guida sull'anticoagulazione orale con warfarina'. Al momento della stampa questa è la quarta edizione del 2011[9].

LIMITAZIONI

Si sconsiglia l'impiego di diluizioni seriali di un plasma di riferimento per la curva %PT, che infatti possono dare luogo a discrepanze dovute al basso livello di fibrinogeno nelle diluizioni del plasma di riferimento, che non compaiono invece nei campioni dei pazienti con livelli di fibrinogeno prevalentemente normali. Helena Biosciences Europe consiglia di utilizzare a questo scopo il kit 5504R %PT/Direct INR.

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 5490	INR Reference Set

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. Ciò è particolarmente importante per la calibrazione dell'ISI locale. Con l'impiego della gamma di strumenti Symex, i valori normali che variano tra 11,50 - 14,60 secondi; 0.930 - 1.160 INR; 79.10 - 112.80 %PT sono ritenuti tipici.

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 Sysmex CA-1500. Ciascun laboratorio dovrà pertanto elaborare i propri dati prestazionali.

Riproducibilità

Campione	Routine Control N		Routine Control A		Routine Control SA	
	SD	*CV (%)*	*SD*	*CV (%)*	*SD*	*CV (%)*
Ripetibilità	0,07	0,59	0,24	1,09	0,45	1,11
Tra le serie	0,10	0,83	0,16	0,75	0,49	1,20
Tra giorni	0,04	0,32	0,06	0,27	0,25	0,62
All'interno del dispositivo/laboratorio	0,12	1,07	0,29	1,35	0,72	1,75

Interferenze

La Thromboplastin L Helena non è sensibile ai livelli di eparina di oltre 2 U/mL. Utilizzando una soglia di interferenza del 5%, non risulta esserci alcuna significativa interferenza da parte dell'emoglobina a concentrazioni fino a 10 g/l. Utilizzando una soglia di interferenza del 5%, non risulta esserci alcuna significativa interferenza da parte della bilirubina a concentrazioni fino a 0,5 g/l per la Thromboplastin L. I test per le interferenze dei lipidi dimostrano che i livelli dei lipidi non influenzano direttamente il tempo di coagulazione del reagente fino a 3,75 g/l. Concentrazioni lipidiche superiori a questo valore impediscono il rilevamento del coagulo.

Confronto dei metodi

Si è eseguito un confronto su 268 campioni tra il tempo di coagulazione in secondi e i valori INR utilizzando la tromboplastina L e la tromboplastina LI. Si sono ottenute le seguenti correlazioni:

Thromboplastin L (secondi) = 0,9911x + 0,1038	r^2 = 0,9941	n = 268
Thromboplastin L (INR) = 0,9853x + 0,0261	r^2 = 0,9500	n = 268

BIBLIOGRAFIA

1. Quick AJ (1935) A Study of the Coagulation Defect in Hemophilia and Jaundice, *Am. J. Med. Sci,* **190:** 501.
2. Biggs R (1976) Human Blood Coagulation, Haemostasis and Thrombosis, 2nd Edition, Blackwell Scientific Publications, London.
3. Hirsh J, Poller L, Deykin D, Levine J, Dalen JE (1989) Optimal Therapeutic Range for Oral Anticoagulants, *Chest,* **95:** 5S-11S.
4. Poller L (1986) Laboratory Control of Anticoagulant Therapy, *Sem. Thromb. Haemostasis,* **12:** 13-19.
5. World Health Organisation (1984) Expert Committee on Biological Standards, *Technical Series,* **700:** 19.
6. Clinical and Laboratory Standards Institute (2008) Collection, Transport and Processing of Blood Specimens for Testing Plasma-Based Coagulation Assays and Molecular Haemostasis Assays: Approved Guideline, 5th edn. CLSI: H21-A5.
7. Poller L., Triplett DA, Hirsh J, Carroll J, Clarke K (1995) The value of plasma calibrants in correcting coagulometer effects on International Normalised Ratios (INR): An international multicentre study, *Amer. J. Clin. Pathol,* **103:** 358-365.
8. Poller L, Triplett DA, Hirsh J, Carroll J, Clarke K (1995) A comparison of lyophilised artificially depleted plasmas and lyophilised plasmas from warfarin treated patients in correcting for coagulometer effects on International Normalised Ratios, *Amer. J. Clin. Pathol,* **103:** 366-371.
9. Keeling D (2011) Guidelines on Oral Anticoagulation with warfarin: Forth Edition, *British Journal of Haematology,* **154(3):** 311-324.

Thromboplastin L
Instrucciones de uso

es

USO PREVISTO

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

La primera prueba estandarizada de la protrombina en una sola etapa fue desarrollada por el Dr. Armand Quick en 1935. Ahora se ha convertido en la prueba de cribado básico de la coagulación para el diagnóstico de deficiencias congénitas y adquiridas de factores de coagulación de la vía extrínseca (factores II, V, VII y X)[1,2]. Se usa también para la inducción y monitorización del tratamiento anticoagulante oral[3,4] y puede usarse para valorar la capacidad de síntesis de proteínas del hígado en trastornos hepáticos crónicos o agudos.
La Thromboplastin L tiene su origen en cerebro de conejo, pero se parece a la BCT humana en su bajo Índice de Sensibilidad Internacional (ISI). El ISI de Thromboplastin L es de aproximadamente 1,1 y se calibra contra el preparado de referencia internacional de la OMS[5]. La prueba de Thromboplastin L está especialmente adaptada a la monitorización del tratamiento anticoagulante oral y, conjuntamente con el plasma deficiente en el factor oportuno, la medición de la actividad de los factores en la vía extrínseca. La tromboplastina tisular, en presencia de iones calcio, es un activador que inicia la vía extrínseca de la coagulación. Cuando se añade una mezcla de tromboplastina tisular e iones calcio al plasma normal citratado, se activa el mecanismo de coagulación, conduciendo a un coágulo de fibrina. Si se produce una deficiencia dentro de la vía extrínseca, el tiempo necesario para la formación de coágulos se prolongará dependiendo de la intensidad de la deficiencia.

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
Thromboplastin L	2 x 5 mL (REF 5265HL) 8 x 5 mL (REF 5265L) 10 x 10 mL (REF 5267L)	Tromboplastina líquida de cerebro de conejo que contiene cloruro de calcio, estabilizadores y conservantes.	La tromboplastina líquida calcificada está lista para su uso. No es necesario más calcio para realizar pruebas estándar de PT. Los contenidos del vial se deben mezclar bien antes de utilizarlo (5 minutos en el rodillo).

Cada kit contiene instrucciones de uso.

Cada kit contiene valores de referencia específicos insertados del lote.

ARTÍCULOS NECESARIOS NO SUMINISTRADOS

Los siguientes productos se puede utilizar junto con la Thromboplastin L:

REF 5519	ISI Calibrant Plasma Set
REF 5490	INR Reference Set

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.

Thromboplastin L — Los viales abiertos permanecen estables durante 2 meses a una temperatura de entre $^{+}$2 – $^{+}$8°C, 5 días a una temperatura mayor a $^{+}$15°C (en el Sysmex CA1500), y 6 horas a una temperatura mayor a $^{+}$37°C (en el AC-4, incluido el contenedor del reactivo y el tapón). Se puede conseguir estabilidad multiuso de 7 días (Sysmex CA-1500).
NO CONGELAR. Los grumos grandes de partículas o los cambios en los valores esperados pueden indicar deterioro del producto.

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 $^{+}$18 –$^{+}$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[6].

PROCEDIMIENTO

Para la comunicación exacta del INR, se recomienda determinar la ISI específica del laboratorio del reactivo con el sistema de prueba en uso. Se recomienda el ISI Calibrant Plasma Set de Helena Biosciences Europe (REF 5519) para este fin[7,8]. Esto debe realizarse para cada nuevo lote de reactivos. Debe usarse el Set de Referencia de INR de Helena Biosciences Europe (REF 5490) para comprobar las desviaciones en el ISI del sistema local que se han observado con cambios en la temperatura del laboratorio y el mantenimiento posinstrumental, entre otras variaciones locales.

Método Manual

1. Mezclar la cantidad suficiente de Thromboplastin L para completar la prueba anticipada para el día e incubar a +37°C durante un período de tiempo no superior a 4 horas.
2. Precaliente 0,1 mL del plasma de prueba a $^{+}$37°C durante 2 minutos.
3. Añada 0,2 mL de reactivo de tromboplastina recién mezclado al plasma mientras pone en marcha simultáneamente un cronómetro.
4. observa el tiempo hasta la formación del coágulo procurando afinar en la décima 0,1 de segundo más próxima.

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 deben comunicarse en los 0,1 segundos más próximos y las pruebas duplicadas deben estar de acuerdo entre sí dentro del 5%. Los valores de %TP pueden interpolarse a partir del gráfico de calibración (%TP de los plasmas de calibración del TP frente al tiempo de coágulo medido) que debe ser una línea recta cuando se representa en un papel de gráficos log-log.

Los valores de INR pueden calcularse usando la siguiente fórmula: INR = (Tiempo de TP Paciente / Tiempo de TP normal medio)^{ISI}

Si necesita una guía clara de indicaciones y tratamiento de pacientes con warfarina, consulte The British Society for Haematology y su última edición de "Guidelines on oral anticoagulation with warfarin" que, en el momento de impresión de este documento, se encuentra en su cuarta edición de 2011[9].

LIMITACIONES

El uso de diluciones seriadas de un plasma de referencia para la curva de %TP no se recomienda, porque puede llevar a discrepancias producidas por el bajo fibrinógeno en las diluciones del plasma de referencia, que no se reflejan en las muestras de pacientes que tienen fundamentalmente niveles normales de fibrinógeno. Helena Biosciences Europe recomienda utilizar el kit 5504R %PT/INR directa a tal fin.

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 5490	INR Reference Set

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 su propio intervalo normal. Esto es especialmente importante para la calibración local del ISI. Con la serie de instrumentos Sysmex, es frecuente que los valores normales varíen entre 11,50 - 14,60 segundos; 0.930 - 1.160 INR; 79.10 - 112.80 %PT .

CARACTERÍSTICAS FUNCIONALES

Las siguientes características de rendimiento han sido determinadas por Helena Biosciences Europe o sus representantes usando un instrumento de coagulación Sysmex CA-1500. Cada laboratorio debe establecer sus propios datos de rendimiento.

Reproductibilidad

Muestra	Routine Control N		Routine Control A		Routine Control SA	
	SD	*CV (%)*	*SD*	*CV (%)*	*SD*	*CV (%)*
Repetibilidad	0,07	0,59	0,24	1,09	0,45	1,11
Entre series	0,10	0,83	0,16	0,75	0,49	1,20
Entre días	0,04	0,32	0,06	0,27	0,25	0,62
En el dispositivo/laboratorio	0,12	1,07	0,29	1,35	0,72	1,75

Interferencias

Helena Thromboplastin L no detecta niveles de heparina inferiores a 2 U/mL.Con un umbral de interferencia del 5%, no hay interferencias significativas de hemoglobina en concentraciones de hasta 10 g/L. Con un umbral de interferencia del 5%, no hay interferencias significativas de bilirrubina en concentraciones de hasta 0,5 g/L para Thromboplastin L. La interferencia de lípidos demuestra que los niveles de lípidos no afectan directamente al tiempo de coagulación del reactivo hasta 3,75 g/L. Las concentraciones de lípidos superiores evitan detectar la coagulación.

Comparación del método

La comparación del tiempo de coagulación y los valores INR se determinó con tromboplastina L y tromboplastina LI en 268 muestras. Se obtuvieron las siguientes correlaciones:

Thromboplastin L (segundo) = 0,9911x + 0,1038	r^2 = 0,9941	n = 268
Thromboplastin L (INR) = 0,9853x + 0,0261	r^2 = 0,9500	n = 268

BIBLIOGRAFÍA

1. Quick AJ (1935) A Study of the Coagulation Defect in Hemophilia and Jaundice, *Am. J. Med. Sci,* **190:** 501.
2. Biggs R (1976) Human Blood Coagulation, Haemostasis and Thrombosis, 2nd Edition, Blackwell Scientific Publications, London.
3. Hirsh J, Poller L, Deykin D, Levine J, Dalen JE (1989) Optimal Therapeutic Range for Oral Anticoagulants, *Chest,* **95:** 5S-11S.
4. Poller L (1986) Laboratory Control of Anticoagulant Therapy, *Sem. Thromb. Haemostasis,* **12:** 13-19.
5. World Health Organisation (1984) Expert Committee on Biological Standards, *Technical Series,* **700:** 19.
6. Clinical and Laboratory Standards Institute (2008) Collection, Transport and Processing of Blood Specimens for Testing Plasma-Based Coagulation Assays and Molecular Haemostasis Assays: Approved Guideline, 5th edn. CLSI: H21-A5.
7. Poller L., Triplett DA, Hirsh J, Carroll J, Clarke K (1995) The value of plasma calibrants in correcting coagulometer effects on International Normalised Ratios (INR): An international multicentre study, *Amer. J. Clin. Pathol,* **103:** 358-365.
8. Poller L, Triplett DA, Hirsh J, Carroll J, Clarke K (1995) A comparison of lyophilised artificially depleted plasmas and lyophilised plasmas from warfarin treated patients in correcting for coagulometer effects on International Normalised Ratios, *Amer. J. Clin. Pathol,* **103:** 366-371.
9. Keeling D (2011) Guidelines on Oral Anticoagulation with warfarin: Forth Edition, *British Journal of Haematology,* **154(3):** 311-324.

Тест-система "Жидкий тромбопластин"
инструкция

ru

НАЗНАЧЕНИЕ

Комплект Тест-система "Жидкий тромбопластин" предназначен для выполнения анализов гемостаза на основе кровяного сгустка.

Впервые стандартизированный одностадийный тест для определения протромбинового времени был предложен д-ром Армандом Квиком в 1935г. Сейчас он стал основным скрининговым тестом для диагностики врожденного и приобретенного дефицитов факторов свертывания крови по внешнему пути (факторы II, V, VII и X)[1,2]. Он также используется для мониторинга терапии оральными антикоагулянтами[3,4], а также может применяться и для оценки белок синтетической функции печени при ее острых либо хронических заболеваниях.
Реагент приготовлен из экстракта ткани мозга кролика и по значению своего МИЧ (Международного Индекса Чувствительности) сопоставим со Стандартом Тромбопластина Британии (BCT – British Comparative Thromboplastin). МИЧ Жидкого тромбопластина примерно равен 1.1 и откалиброван относительно международного референса BO3[5]. Жидкий тромбопластин особенно подходит для мониторинга терапии оральными антикоагулянтами и для измерения активности факторов внешнего пути свертывания(вместе с соответствующей фактор-дефицитной плазмой). Тканевый тромбопластин в присутствии йонов кальция является активатором внешнего пути свертывания крови. При добавлении смеси тканевого тромбопластина с кальцием к нормальной цитратной плазме активируется механизм её свертывания, приводящий к образованию фибринового сгустка. Если у пациента имеет место дефицит факторов внешнего пути, то время, необходимое для образования сгустка будет удлиняться прямо пропорционально степени дефицита факторов.

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

Компоненты	Состав набора	Описание	Приготовление реагентов
Жидкий тромбопластин	2 x 5 мл (Кат.№ 5265HL) 8 x 5 мл (Кат.№ 5265L) 10 x 10 мл (Кат.№ 5267L)	Тромбопластин-кальциевая суспензию реагента из экстракта ткани мозга кролика, раствора хлорида кальция и стабилизаторов	Жидкий кальцинированный тромбопластин, готовый для использования. Для проведения теста ПВ дополнительный кальций не требуется. Содержимое флакона перемешать до использования (5 мин. на роллере)

Каждый набор содержит инструкцию по применению.

Вкладыш с указанием референсных значений к различным анализаторам и методам исследования, характерным для данного лота.

НЕОБХОДИМЫЕ КОМПОНЕНТЫ, НЕ ВКЛЮЧЕННЫЕ В КОМПЛЕКТ ПОСТАВКИ

Продукция ниже, которая может использоваться вместе с Тест-системой «Тромбопластин»:

Кат.№ 5519	Калибратор МИЧ
Кат.№ 5490	Контроль на МНО

ХРАНЕНИЕ, СРОК ГОДНОСТИ И УСТОЙЧИВОСТЬ

Невскрытые флаконы с реагентами хранятся до истечения срока годности в условиях, указанных на этикетке.

Жидкий тромбопластин — Вскрытые флаконы годны к применению в течение 2 месяцев при температуре хранения 2-8°C, 5 дней при 15°C (на борту Sysmex CA-1500) и 6 часов при 37°C (на борту AC-4, используя контейнер для реагентов с крышкой). Стабильность реагента на борту Sysmex CA-1500 - 7 дней.
НЕ ЗАМОРАЖИВАТЬ! Признаки ухудшения качества реагента: большое скопление частиц или отличия от ожидаемых значений могут означать ухудшение свойств реактива.

ОТБОР И ПОДГОТОВКА ОБРАЗЦОВ

Для работы следует использовать только пластиковые или силиконированные стеклянные пробирки. Кровь забирается в пробирку с цитратным антикоагулянтом (3,2% или 3,8% цитрат натрия) в соотношении 9 + 1. После центрифугирования при 1500 g, в течение 15 минут (использование других параметров должно проверяться лабораторией), полученную плазму необходимо отделить от форменных элементов крови. Плазму следует хранить при температуре $^{+}$18 –$^{+}$24°C. Тестирование должно быть проведено в течение 4 часов после забора образцов, либо плазму можно однократно заморозить и хранить при температуре -20°C в течение 2 недель или при -70°C в течение 6 месяцев. Перед проведением исследования плазму следует быстро разморозить при $^{+}$37°C. Не держать плазму при $^{+}$37°C более 5 минут[6].

ПРОЦЕДУРА

Для установления более точного МНО рекомендуется определить специфическое для лаборатории значение МИЧ (так называемый «локальный» МИЧ) для жидкого тромбопластина. Helena Biosciences Europe рекомендует для этих целей применять Калибратор МИЧ (Кат.№ REF 5519)[7,8]. Подобная процедура должна быть проведена для каждой новой партии реагентов. Контроль на МНО (Кат.№ REF 5490) используется для контроля изменения в «локальном» МИЧ, так как его значение может незначительно варьировать в зависимости от используемых приборов, а также изменений температуры в лаборатории и других локальных факторов.

Ручной Метод

1. Взять необходимое количество жидкого тромбопластина, необходимое для проведения тестирования в течение дня и инкубировать при 370С (но не более 4 часов).
2. Прогреть 0,1 мл тестируемой плазмы при $^{+}$37°C в течение 2 минут.
3. Добавить 0,2 мл свежеприготовленной рабочей смеси реагентов к плазме и немедленно включить таймер.
4. Заметить время, необходимое для образования сгустка с точностью до 0,1сек.

Автоматизированный Метод

Для проведения тестирования на автоматических коагулометрах, необходимо обратиться к руководству пользователя и к соответствующей адаптации, которые доступны у официальных дистрибьюторов и компании Хелена.

ИНТЕРПРЕТАЦИЯ РЕЗУЛЬТАТОВ

Результаты должны быть представлены с точностью до 0,1 сек и разница в повторах не должна превышать 5%. Значение %ПВ можно определить по калибровочному графику (график зависимости %ПВ от измеренного времени), который должен быть строго линейным в билогарифмических координатах при построении графика на миллиметровке с логарифмическим масштабом на обеих осях.

МНО может быть вычислено по формуле: МНО= {ПВ (пациента)/среднее ПВ (норма)}^{МИЧ}

Для более подробной информации по мониторингу пациентов на Варфарине обратитесь к рекомендациям Британского Общества по Гематологии - «Рекомендации по антикоагулянтной терапии варфарином», 4-е издание 2011г. на время печати этого документа[9].

ОГРАНИЧЕНИЯ

Для получения графика зависимости (%ПТ) от времени свертывания не рекомендуется использовать серии разведений референсной плазмы, поскольку это может привести к неточности, вызванной низким содержанием фибриногена в больших разведениях референсной плазмы, что не соответствует образцам пациентов, имеющих, в основном, нормальный уровень фибриногена. Компания Хелена рекомендует использовать калибратор кат. номер 5504R для %ПВ, и прямого определения МНО.

КОНТРОЛЬ КАЧЕСТВА

Каждая лаборатория должна установить программу контроля качества. Перед измерением каждой партии образцов пациентов необходимо протестировать нормальную и патологическую плазму, чтобы удостовериться в удовлетворительной работе оборудования и оператора. Если контрольные измерения не совпадают с ожидаемыми значениями, то измеренные данные пациентов следует считать недостоверными.
Компания Хелена рекомендует следующие контрольные материалы:

Кат.№ 5186	Контроль качества, норма
Кат.№ 5187	Контроль качества, умеренно выраженная патология
Кат.№ 5183	Контроль качества, высокая патология
Кат.№ 5490	Контроль на МНО

НОРМАЛЬНЫЕ ПОКАЗАТЕЛИ

Референсные значения могут варьировать между лабораториями в зависимости от используемых методов и анализаторов. В связи с этим каждая лаборатория должна определить свою собственную область нормальных значений. Это крайне важно для установки локального МИЧ тромбопластина. Диапазон нормальных значений пациентов 11,50 - 14,60 сек.; 0.930 - 1.160 INR; 79.10 - 112.80 %PT с использованием коагулометров Sysmex.

ЭКСПЛУАТАЦИОННЫЕ ХАРАКТЕРИСТИКИ

Компания Хелена или её дистрибьюторы определили следующие ориентировочные аналитические характеристики. Каждая лаборатория должна определить свои собственные аналитические характеристики. При использовании оптико-механического коагулометра и реагентов Хелена были определены следующие коэффициенты вариации (CV):

Воспроизводимость

Образец	Контроль качества, норма		Контроль качества, умеренно выраженная патология		Контроль качества, высокая патология	
	SD	*CV (%)*	*SD*	*CV (%)*	*SD*	*CV (%)*
Воспроизводимость	0,07	0,59	0,24	1,09	0,45	1,11
в пределах аналитической серии	0,10	0,83	0,16	0,75	0,49	1,20
между разными аналитическими сериями	0,04	0,32	0,06	0,27	0,25	0,62
между партиями/лабораториями	0,12	1,07	0,29	1,35	0,72	1,75

Тест-система "Жидкий тромбопластин" не чувствителен к гепарину в концентрации до 2 Ед/мл. Используя 5% допустимое отклонение, реагент не чувствителен к гемоглобину в концентрации до 10 г/Л. Используя 5% допустимое отклонение, реагент не чувствителен к билирубину в концентрации до 0.5 г/Л. Не обнаружено чувствительности к уровню липидов до 3.75 г/Л оказывающих воздействие на время свёртываемости. Концентрации липидов выше этого уровня предотвратит обнаружение сгустка.

Сравнение со стандартами:
Сравнение значений МНО 268 образцов, определённых с помощью Тест-системы "Тромбопластин" и Тест-системы "Жидкий тромбопластин" дало следующие корреляционные соотношения:

Жидкий Тромбопластин (сек) = 0,9911x + 0,1038	r^2 = 0,9941	n = 268
Жидкий Тромбопластин (МНО) = 0,9853x + 0,0261	r^2 = 0,9500	n = 268

ЛИТЕРАТУРА

1. Quick AJ (1935) A Study of the Coagulation Defect in Hemophilia and Jaundice, *Am. J. Med. Sci,* **190:** 501.
2. Biggs R (1976) Human Blood Coagulation, Haemostasis and Thrombosis, 2nd Edition, Blackwell Scientific Publications, London.
3. Hirsh J, Poller L, Deykin D, Levine J, Dalen JE (1989) Optimal Therapeutic Range for Oral Anticoagulants, *Chest,* **95:** 5S-11S.
4. Poller L (1986) Laboratory Control of Anticoagulant Therapy, *Sem. Thromb. Haemostasis,* **12:** 13-19.
5. World Health Organisation (1984) Expert Committee on Biological Standards, *Technical Series,* **700:** 19.
6. Clinical and Laboratory Standards Institute (2008) Collection, Transport and Processing of Blood Specimens for Testing Plasma-Based Coagulation Assays and Molecular Haemostasis Assays: Approved Guideline, 5th edn. CLSI: H21-A5.
7. Poller L., Triplett DA, Hirsh J, Carroll J, Clarke K (1995) The value of plasma calibrants in correcting coagulometer effects on International Normalised Ratios (INR): An international multicentre study, *Amer. J. Clin. Pathol,* **103:** 358-365.
8. Poller L, Triplett DA, Hirsh J, Carroll J, Clarke K (1995) A comparison of lyophilised artificially depleted plasmas and lyophilised plasmas from warfarin treated patients in correcting for coagulometer effects on International Normalised Ratios, *Amer. J. Clin. Pathol,* **103:** 366-371.
9. Keeling D (2011) Guidelines on Oral Anticoagulation with warfarin: Forth Edition, *British Journal of Haematology,* **154(3):** 311-324.

CERTIFICAT

CERTIFICATE OF REGISTRATION

N° 10462 rev. 8

GMED certifie que le système de management de la qualité développé par

GMED certifies that the quality management system developed by

ELITECH CLINICAL SYSTEMS SAS

Zone Industrielle

61500 SEES FRANCE

pour les activités

for the activities

Conception, production, contrôle et commercialisation de produits de chimie cliniques pour le diagnostic in vitro. Validation de la combinaison réactifs et automates. Distribution d'automates et de produits de chimie cliniques pour le diagnostic in vitro.

Design, production, control and sales of clinical chemistry products intended to be used for in vitro diagnostics. Validation of the combination reagents and analyzers. Distribution of clinical chemistry analyzers and products for in vitro diagnostics.

réalisées sur le(s) site(s) de

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est conforme aux exigences des normes internationales

complies with the requirements of the international standards

NF EN ISO 13485 : 2016

Début de validité */ Effective date :* **July 25th, 2023 (included)**

Valable jusqu'au */ Expiry date :* **July 27th, 2026 (included)**

Etabli le */ Issued on :* **July 25th, 2023**

GMED SAS GMED SAS GMED GROUPE LNE

DocuSigned by:

Marjorie PERRIMON

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On behalf of the President,
Marjorie PERRIMON
Certification Director

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GMED_SQ-F-V0-07-2018

GMED N° 10462–8

Ce certificat est délivré selon les règles de certification GMED / This certificate is issued according to the rules of GMED certification

Renouvelle le certificat 10462-7

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ELITechGroup
EMPOWERING IVD

DECLARATION DE CONFORMITE CE

Nous, ELITech Clinical Systems SAS, zone industrielle 61500 SEES France, déclarons sous notre seule responsabilité que les réactifs référencés dans la liste ci-jointe (6 pages), sont conformes aux exigences essentielles des annexes I et III de la Directive Européenne 98/79/CE relative aux dispositifs médicaux de diagnostic *in vitro* et au code de la santé publique.

Ces dispositifs sont classés dans la catégorie « autre dispositif » puisqu'ils n'appartiennent ni à la liste A et liste B de l'annexe II et ni à la classe des autotests.

Cette déclaration est basée sur le contenu de chaque dossier technique et s'appuie sur la certification de notre système qualité selon la norme NF EN ISO 13485 : 2016 (Certification valable jusqu'au 27 juillet 2026).

Nous, ELITech Clinical Systems SAS, zone industrielle 61500 SEES France, déclarons les électrodes conformes à la Directive 2011/65/UE du parlement européen et du conseil du 8 juin 2011 relative à la limitation de l'utilisation de certaines substances dangereuses dans les équipements électriques et électroniques incluant la DIRECTIVE DÉLÉGUÉE (UE) 2015/863 DE LA COMMISSION du 31 mars 2015 modifiant l'annexe II de la Directive 2011/65/UE du Parlement européen et du Conseil en ce qui concerne la liste des substances soumises à limitations.

DECLARATION OF EC CONFORMITY

We, ELITech Clinical Systems SAS, Zone Industrielle 61500 SEES France, hereby certify, under our own responsibility, that the reagents such as listed attached (6 pages), conform to the essential requirements of appendices I and III of European Directive 98/79/EC, relating to in vitro diagnostic medical devices and to the public health code.

These devices are classified in the "other device" category since they do not belong neither to list A or list B of annex II nor to self-testing class.

This declaration is based on the contents of each technical file and is supported by the certification of our quality system according to the standard NF EN ISO 13485 : 2016 (Certification valid until July 27th , 2026).

We, ELITech Clinical Systems SAS, Zone Industrielle 61500 SEES France, hereby certify electrodes; conform to Directive 2011/65/EU of the European Parliament and of the Council of 8 June 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment, including Commission Delegated Directive (EU) 2015/863 of 31 March 2015 amending Annex II to Directive 2011/65/EU of the European Parliament and of the Council as regards the list of restricted substances.

DECLARACIÓN CE DE CONFORMIDAD

Nosotros, ELITech Clinical Systems SAS, Zone Industrielle 61500 SEES France, declaramos bajo nuestra única responsabilidad que los reactivos referenciados en la lista adjunta (6 páginas), son conformes con los requisitos esenciales de los anexos I y III de la Directiva Europea 98/79/CE sobre dispositivos médicos para diagnóstico in vitro y el código de salud pública.

Estos dispositivos se clasifican en la categoría "otro dispositivo", ya que no pertenecen a la lista A ni a la lista B del anexo II, tampoco a la clase de autodiagnóstico.

Esta declaración se basa en el contenido de cada expediente técnico y está respaldado por la certificación de nuestro sistema de calidad según la norma NF EN ISO 13485 : 2016 (Certificación válida hasta el 27 de Julio 2026).

Nosotros, ELITech Clinical Systems SAS, Zone Industrielle 61500 SEES France, declaramos los electrodos conformes con la Directiva 2011/65/UE del parlamento europeo y del consejo del 8 de junio de 2011 sobre restricciones a la utilización de algunas sustancias peligrosas en aparatos eléctricos y electrónicos incluyendo la Directiva delegada (UE) 2015/863 de la comisión del 31 de marzo de 2015 por la que se modifica el anexo II de la Directiva 2011/65/UE del Parlamento Europeo y del Consejo en cuanto a la lista de sustancias restringidas.

Sées, le 12 octobre 2023

Valérie LAMBERT,
Responsable des Affaires Réglementaires
Regulatory Affairs Manager
Responsable de los Asuntos Reglementarios

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Cécile GOUBAULT,
Directeur Général Délégué
Managing Director
Directora General

Annex

REF	PRODUCT NAME	GMDN Code
3918-004	Sodium Electrode (Na+)	52896
3918-005	Potassium Electrode (K+)	52892
3918-006	Chloride Electrode (Cl-)	52876
3918-003	Carbon Dioxide Electrode (CO2)	60773
3918-002	Reference Electrode (REF)	59241
ALBU-0250	ALBUMIN	53597
ALBU-5220	ALBUMIN	53597
ALBU-0600	ALBUMIN p.73	53597
ALBU-5600	ALBUMIN	53597
ALBU-0700	ALBUMIN	53597
ALBU-5700	ALBUMIN	53597
ALBU-M830	ALBUMIN	53597
ALBU-5M30	ALBUMIN	53597
ALPI-0230	ALP IFCC	52928
ALPI-5100	ALP IFCC	52928
ALPI-6050	ALP IFCC	52928
ALSL-0250	ALT/GPT 4+1 SL	52923
ALSL-5220	ALT/GPT 4+1 SL	52923
ALSL-6050	ALT/GPT 4+1 SL	52923
ALSL-0410	ALT/GPT 4+1 SL	52923
ALSL-5415	ALT/GPT 4+1 SL	52923
ALSL-6255	ALT/GPT 4+1 SL	52923
ALSL-0430	ALT/GPT 4+1 SL	52923
ALSL-0455	ALT/GPT 4+1 SL	52923
ALSL-0510	ALT/GPT 4+1 SL p.72	52923
ALSL-5515	ALT/GPT 4+1 SL	52923
ALSL-6615	ALT/GPT 4+1 SL	52923
ALSL-M490	ALT/GPT	52923
ALSL-5M90	ALT/GPT	52923
ALSL-6M30	ALT/GPT	52923
AMSL-0230	AMYLASE SL	52940
AMSL-5220	AMYLASE SL	52940
AMSL-0390	AMYLASE SL	52940
AMSL-5405	AMYLASE SL	52940
AMSL-0400	AMYLASE SL p.74	52940
AMSL-M430	AMYLASE	52940
AMSL-5M30	AMYLASE	52940
ASLO-0250	ANTI-STREPTOLYSIN O	59055
ASLO-5025	ANTI-STREPTOLYSIN O	59055
ASLO-6006	ANTI-STREPTOLYSIN O	59055
ASLO-4001	ANTI-STREPTOLYSIN O	51744
ASSL-0250	AST/GOT 4+1 SL	52954
ASSL-5220	AST/GOT 4+1 SL	52954
ASSL-6050	AST/GOT 4+1 SL	52954
ASSL-0410	AST/GOT 4+1 SL	52954
ASSL-5415	AST/GOT 4+1 SL	52954
ASSL-6255	AST/GOT 4+1 SL	52954
ASSL-0430	AST/GOT 4+1 SL	52954
ASSL-0455	AST/GOT 4+1 SL	52954
ASSL-0510	AST/GOT 4+1 SL p.75	52954
ASSL-5515	AST/GOT 4+1 SL	52954
ASSL-6615	AST/GOT 4+1 SL	52954
ASSL-M490	AST/GOT	52954
ASSL-5M90	AST/GOT	52954
ASSL-6M30	AST/GOT	52954
AUML-0250	URIC ACID MONO SL	53583
AUML-5220	URIC ACID MONO SL	53583
AUML-0420	URIC ACID MONO SL	53583
AUML-5405	URIC ACID MONO SL	53583
AUML-0427	URIC ACID MONO SL	53583
AUML-0497	URIC ACID MONO SL	53583
AUML-5505	URIC ACID MONO SL	53583
AUML-0500	URIC ACID MONO SL	53583
AUML-0507	URIC ACID MONO SL p.84	53583
AUML-0707	URIC ACID MONO SL	53583
AUML-5710	URIC ACID MONO SL	53583
AUML-M830	URIC ACID	53583
AUML-5M30	URIC ACID	53583
AUSL-0250	URIC ACID SL	53583
AUSL-5220	URIC ACID SL	53583
AUSL-6050	URIC ACID SL	53583
BIDI-0250	BILIRUBIN DIRECT 4+1	53233
BIDI-5220	BILIRUBIN DIRECT 4+1	53233
BIDI-6050	BILIRUBIN DIRECT 4+1	53233
BIDI-0500	BILIRUBIN DIRECT p.76	53233
BIDI-5600	BILIRUBIN DIRECT	53233
BITD-6250	BILIRUBIN DIRECT	53233

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Annex

REF	PRODUCT NAME	GMDN Code
BIDI-M430	DIRECT BILIRUBIN	53233
BIDI-5M30	DIRECT BILIRUBIN	53233
BIDI-6M10	DIRECT BILIRUBIN	53233
BIDV-0850	DIRECT BILIRUBIN ENVOY	53233
BITO-0250	BILIRUBIN TOTAL 4+1	53229
BITO-5220	BILIRUBIN TOTAL 4+1	53229
BITO-6050	BILIRUBIN TOTAL 4+1	53229
BITO-0600	BILIRUBIN TOTAL 4+1	53229
BITO-5600	BILIRUBIN TOTAL 4+1	53229
BITD-6400	BILIRUBIN TOTAL 4+1	53229
BITO-M430	TOTAL BILIRUBIN	53229
BITO-5M30	TOTAL BILIRUBIN	53229
BITO-6M10	TOTAL BILIRUBIN	53229
BITV-0850	TOTAL BILIRUBIN ENVOY	53229
CALA-0250	CALCIUM ARSENAZO	45789
CALA-5220	CALCIUM ARSENAZO	45789
CALA-0600	CALCIUM ARSENAZO	45789
CALA-5600	CALCIUM ARSENAZO	45789
CALA-M430	CALCIUM ARSENAZO	45789
CALA-5M30	CALCIUM ARSENAZO	45789
CALI-0550	ELICAL 2	47868
CALI-1550	ELICAL 2	47868
CHDL-0250	HDL CHOLESTEROL	53391
CHDL-5021	HDL CHOLESTEROL	53391
CHDL-6014	HDL CHOLESTEROL	53391
CHDL-0600	HDL CHOLESTEROL	53391
CHDL-5090	HDL CHOLESTEROL	53391
CHDL-6060	HDL CHOLESTEROL	53391
CHDL-M330	HDL CHOLESTEROL	53391
CHDL-5M30	HDL CHOLESTEROL	53391
CHDL-6M30	HDL CHOLESTEROL	53391
CHEB-0250	CHOLINESTERASE	52971
CHEB-5008	CHOLINESTERASE	52971
CHEB-6005	CHOLINESTERASE	52971
CHSL-0250	CHOLESTEROL SL	53359
CHSL-5220	CHOLESTEROL SL	53359
CHSL-0455	CHOLESTEROL SL	53359
CHSL-0497	CHOLESTEROL SL	53359
CHSL-5505	CHOLESTEROL SL	53359
CHSL-0500	CHOLESTEROL SL	53359
CHSL-0507	CHOLESTEROL SL p.78	53359
CHSL-0700	CHOLESTEROL SL	53359
CHSL-5710	CHOLESTEROL SL	53359
CHSL-0707	CHOLESTEROL SL	53359
CHSL-M690	CHOLESTEROL	53359
CHSL-5M90	CHOLESTEROL	53359
CKMB-0900	CK-MB CONTROL	44693
CKMB-1030	CK-MB CONTROL	44693
CKSL-0230	CK NAC SL	53003
CKSL-5220	CK NAC SL	53003
CKSL-6050	CK NAC SL	53003
CKSL-0410	CK NAC SL	53003
CKSL-5405	CK NAC SL	53003
CKSL-6255	CK NAC SL	53003
CKSL-0430	CK NAC SL	53003
CKSL-M230	CK NAC	53003
CKSL-5M30	CK NAC	53003
CKSL-6M10	CK NAC	53003
CLDL-0250	LDL CHOLESTEROL	53395
CLDL-5021	LDL CHOLESTEROL	53395
CLDL-6014	LDL CHOLESTEROL	53395
CLDL-M330	LDL CHOLESTEROL	53395
CLDL-5M30	LDL CHOLESTEROL	53395
CLDL-6M30	LDL CHOLESTEROL	53395
CMSL-0230	CK-MB	52994
CMSL-5220	CK-MB	52994
CMSL-6220	CK-MB	52994
CMSL-WR	CK-MB	52994
CMSL-0410	CK-MB SL	52994
CMSL-5405	CK-MB SL	52994
CMSL-6255	CK-MB SL	52994
CONT-0060	ELITROL I p.86	47869
CONT-1060	ELITROL I	47869
CONT-0160	ELITROL II p.87	47869
CONT-1160	ELITROL II	47869
CRCO-0600	CREATININE JAFFE	53251
CRCO-5600	CREATININE JAFFE	53251
CRCO-6600	CREATININE JAFFE	53251
CRCO-0700	CREATININE JAFFE	53251

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REF	PRODUCT NAME	GMDN Code
CRSL-0250	CREATININE PAP SL	53250
CRSL-5221	CREATININE PAP SL	53250
CRSL-6070	CREATININE PAP SL	53250
CRSL-0630	CREATININE PAP SL	53250
CRSL-5505	CREATININE PAP SL	53250
CRSL-6470	CREATININE PAP SL	53250
CRSL-M490	CREATININE PAP	53250
CRSL-5M90	CREATININE PAP	53250
CRSL-6M30	CREATININE PAP	53250
FEFE-0230	IRON FERENE	54758
FEFE-5140	IRON FERENE	54758
FEFE-6040	IRON FERENE	54758
FEFE-0600	IRON FERENE	54758
FEFE-5600	IRON FERENE	54758
FEFE-6400	IRON FERENE	54758
FEFE-0850	IRON ENVOY	54758
FEFE-M230	IRON FERENE	54758
FEFE-5M30	IRON FERENE	54758
FEFE-6M10	IRON FERENE	54758
GHSL-0250	GLUCOSE HK SL	53301
GHSL-5220	GLUCOSE HK SL	53301
GHSL-6050	GLUCOSE HK SL	53301
GHSL-0600	GLUCOSE HK SL D.80	53301
GHSL-5505	GLUCOSE HK SL	53301
GHSL-6605	GLUCOSE HK SL	53301
GHSL-M490	GLUCOSE HK	53301
GHSL-5M90	GLUCOSE HK	53301
GHSL-6M30	GLUCOSE HK	53301
GISL-0250	GAMMA-GT PLUS SL	53027
GISL-5220	GAMMA-GT PLUS SL	53027
GISL-6050	GAMMA-GT PLUS SL	53027
GISL-0400	GAMMA-GT PLUS SL	53027
GISL-0420	GAMMA-GT PLUS SL	53027
GISL-5405	GAMMA-GT PLUS SL	53027
GISL-6255	GAMMA-GT PLUS SL	53027
GISL-M230	GAMMA-GT	53027
GISL-5M30	GAMMA-GT	53027
GISL-6M10	GAMMA-GT	53027
GPSL-0250	GLUCOSE PAP SL	53301
GPSL-5220	GLUCOSE PAP SL	53301
GPSL-0455	GLUCOSE PAP SL	53301
GPSL-0497	GLUCOSE PAP SL	53301
GPSL-5505	GLUCOSE PAP SL	53301
GPSL-0500	GLUCOSE PAP SL	53301
GPSL-0507	GLUCOSE PAP SL	53301
GPSL-0700	GLUCOSE PAP SL	53301
GPSL-5710	GLUCOSE PAP SL	53301
GPSL-0707	GLUCOSE PAP SL	53301
GPSL-M690	GLUCOSE PAP	53301
GPSL-5M90	GLUCOSE PAP	53301
HBAC-0043	HbA1c CALIBRATOR SET D.85	53315
HBAC-4301	HbA1c CALIBRATOR SET	53315
HBAC-4302	HbA1c CALIBRATOR SET	53315
HBAC-4303	HbA1c CALIBRATOR SET	53315
HBAC-4304	HbA1c CALIBRATOR SET	53315
HBAC-0049	HbA1c CONTROL L + H D.85	44435
HBAC-4605	HbA1c CONTROL L + H	44435
HBAC-4705	HbA1c CONTROL L + H	44435
HBAC-0240	HbA1c D.85	59090
HBAC-5224	HbA1c	59090
HBAC-6076	HbA1c	59090
HBAC-6004	HbA1c	59090
HBAC-7225	HbA1c	59090
HBAE-0043	HbA1c Enzymatic Calibrator Set	53315
HBAE-4301	HbA1c Enzymatic Calibrator Set	53315
HBAE-4303	HbA1c Enzymatic Calibrator Set	53315
HBAE-M130	HbA1c Enzymatic	63151
HBAE-5M30	HbA1c Enzymatic	63151
HBAE-6M30	HbA1c Enzymatic	63151
HBAE-7050	HbA1c Enzymatic	63151
HDLL-0011	CHOLESTEROL HDL 2G CALIBRATOR	44696
HDLL-0041	CHOLESTEROL HDL 2G CALIBRATOR	44696
HDLL-0230	CHOLESTEROL HDL SL 2G	53391
HDLL-0380	CHOLESTEROL HDL SL 2G	53391
HDLL-0390	CHOLESTEROL HDL SL 2G	53391
HLCA-0041	HDL LDL CALIBRATOR	47868
HLCA-4001	HDL LDL CALIBRATOR	47868
ICRP-0043	CRP IP CALIBRATOR SET	41838

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REF	PRODUCT NAME	GMDN Code
ICRP-4311	CRP IP CALIBRATOR SET	41838
ICRP-4312	CRP IP CALIBRATOR SET	41838
ICRP-4313	CRP IP CALIBRATOR SET	41838
ICRP-4314	CRP IP CALIBRATOR SET	41838
ICRP-4315	CRP IP CALIBRATOR SET	41838
ICRP-0046	CRP IP CONTROL I	41839
ICRP-4610	CRP IP CONTROL I	41839
ICRP-0047	CRP IP CONTROL II	41839
ICRP-4710	CRP IP CONTROL II	41839
ICRP-0400	CRP IP	53705
ICRP-6125	CRP IP	53705
ICRP-5025	CRP IP	53705
ICRP-M230	CRP IP	53705
ICRP-6M30	CRP IP	53705
ICRP-5M30	CRP IP	53705
IFRT-0042	FERRITIN CALIBRATOR	41927
IFRT-4230	FERRITIN CALIBRATOR	41927
IFRT-0230	FERRITIN	53718
IFRT-5020	FERRITIN	53718
IFRT-6005	FERRITIN	53718
IHAP-0400	HAPTOGLOBIN IP	53737
IHAP-6125	HAPTOGLOBIN IP	53737
IHAP-5025	HAPTOGLOBIN IP	53737
IIGA-0400	IgA IP	53760
IIGA-6125	IgA IP	53760
IIGA-5025	IgA IP	53760
IIGG-0400	IgG IP	53787
IIGG-6125	IgG IP	53787
IIGG-5025	IgG IP	53787
IIGM-0400	IgM IP	53795
IIGM-6125	IgM IP	53795
IIGM-5025	IgM IP	53795
IMAL-0043	µALBUMIN IP CALIBRATOR SET	53477
IMAL-4311	µALBUMIN IP CALIBRATOR SET	53477
IMAL-4312	µALBUMIN IP CALIBRATOR SET	53477
IMAL-4313	µALBUMIN IP CALIBRATOR SET	53477
IMAL-4314	µALBUMIN IP CALIBRATOR SET	53477
IMAL-4315	µALBUMIN IP CALIBRATOR SET	53477
IMAL-0046	µALBUMIN IP CONTROL I	53478
IMAL-4610	µALBUMIN IP CONTROL I	53478
IMAL-0047	µALBUMIN IP CONTROL II	53478
IMAL-4710	µALBUMIN IP CONTROL II	53478
IMAL-0400	µALBUMIN IP	53475
IMAL-6125	µALBUMIN IP	53475
IMAL-5025	µALBUMIN IP	53475
IMAL-M230	MICROALBUMIN IP	53475
IMAL-6M30	MICROALBUMIN IP	53475
IMAL-5M30	MICROALBUMIN IP	53475
IORO-0400	OROSOMUCOID IP	53606
IORO-6125	OROSOMUCOID IP	53606
IORO-5025	OROSOMUCOID IP	53606
IPAL-0400	PREALBUMIN IP	53957
IPAL-6125	PREALBUMIN IP	53957
IPAL-5025	PREALBUMIN IP	53957
IPRO-0043	PROTEIN IP CALIBRATOR SET	53593
IPRO-4311	PROTEIN IP CALIBRATOR SET	53593
IPRO-4312	PROTEIN IP CALIBRATOR SET	53593
IPRO-4313	PROTEIN IP CALIBRATOR SET	53593
IPRO-4314	PROTEIN IP CALIBRATOR SET	53593
IPRO-4315	PROTEIN IP CALIBRATOR SET	53593
IRCT-0046	RHEUMATOLOGY CONTROL I	47869
IRCT-4610	RHEUMATOLOGY CONTROL I	47869
IRCT-0047	RHEUMATOLOGY CONTROL II	47869
IRCT-4710	RHEUMATOLOGY CONTROL II	47869
IRFA-0042	RF CALIBRATOR	42230
IRFA-4220	RF CALIBRATOR	42230
IRFA-0230	RHEUMATOID FACTOR	55111
IRFA-5020	RHEUMATOID FACTOR	55111
IRFA-6005	RHEUMATOID FACTOR	55111
ISCA-0250	ISE CALIBRATORS	52867
ISCA-4221	ISE CALIBRATORS	52867
ISCA-4222	ISE CALIBRATORS	52867
ITRF-0400	TRANSFERRIN IP	59041
LACI-0250	LACTATE	53342
LACI-5008	LACTATE	53342
LACI-6005	LACTATE	53342
LDLL-0011	CHOLESTEROL LDL 2G CALIBRATOR	41728
LDLL-0041	CHOLESTEROL LDL 2G CALIBRATOR	41728

Annex

REF	PRODUCT NAME	GMDN Code
LDLL-0230	CHOLESTEROL LDL SL 2G	53395
LDLL-0380	CHOLESTEROL LDL SL 2G	53395
LDLL-0390	CHOLESTEROL LDL SL 2G	53395
LLSL-0230	LDH-L SL	53072
LLSL-5220	LDH-L SL	53072
LLSL-6050	LDH-L SL	53072
LLSL-0400	LDH-L SL	53072
LLSL-5400	LDH-L SL	53072
LLSL-6250	LDH-L SL	53072
LLSL-0420	LDH-L SL	53072
LLSL-M230	LDH IFCC	53072
LLSL-5M30	LDH IFCC	53072
LLSL-6M10	LDH IFCC	53072
LPSL-0230	LIPASE SL	53108
LPSL-0250	LIPASE	53108
LPSL-5088	LIPASE	53108
LPSL-6061	LIPASE	53108
LPSL-0850	LIPASE ENVOY	53108
LXCR-0112	CRP LATEX	53707
MAGX-0230	MAGNESIUM XYLIDYL	46795
MAGX-0600	MAGNESIUM XYLIDYL	46795
MAGX-0850	MAGNESIUM ENVOY	46795
MGXB-0250	MAGNESIUM XB	46795
MGXB-5220	MAGNESIUM XB	46795
MGXB-0600	MAGNESIUM XB	46795
MGXB-5600	MAGNESIUM XB	46795
MGXB-M430	MAGNESIUM XB	46795
MGXB-5M30	MAGNESIUM XB	46795
PASL-0230	ALP (DEA) SL	52928
PASL-5220	ALP (DEA) SL	52928
PASL-6050	ALP (DEA) SL	52928
PASL-0400	ALP (DEA) SL	52928
PASL-5405	ALP (DEA) SL	52928
PASL-6255	ALP (DEA) SL	52928
PASL-0420	ALP (DEA) SL	52928
PHOS-0230	PHOSPHORUS	59123
PHOS-5220	PHOSPHORUS	59123
PHOS-0600	PHOSPHORUS	59123
PHOS-5600	PHOSPHORUS	59123
PHOS-M430	PHOSPHORUS	59123
PHOS-5M30	PHOSPHORUS	59123
PIVD-0850	ALP ENVOY	52928
PROB-0250	TOTAL PROTEIN PLUS	53985
PROB-5220	TOTAL PROTEIN PLUS	53985
PROB-0600	TOTAL PROTEIN PLUS	53985
PROB-5600	TOTAL PROTEIN PLUS	53985
PROB-0700	TOTAL PROTEIN PLUS	53985
PROB-5700	TOTAL PROTEIN PLUS	53985
PROB-M830	TOTAL PROTEIN	53985
PROB-5M30	TOTAL PROTEIN	53985
PRTU-0022	MICROPROTEIN PLUS Standard 100 mg/dL	53482
PRTU-0250	MICROPROTEIN PLUS	53481
PRTU-0600	MICROPROTEIN PLUS	53481
PRTU-5600	MICROPROTEIN PLUS	53481
PRTU-M230	URINE PROTEIN	53481
PRTU-5M30	URINE PROTEIN	53481
RHFA-M130	RHEUMATOID FACTOR	55111
RHFA-5M30	RHEUMATOID FACTOR	55111
RHFA-6M30	RHEUMATOID FACTOR	55111
RHFA-4220	RHEUMATOID FACTOR	42230
TGML-0250	TRIGLYCERIDES SL	53460
TGML-5220	TRIGLYCERIDES SL	53460
TGML-0425	TRIGLYCERIDES MONO SL NEW	53460
TGML-5415	TRIGLYCERIDES MONO SL NEW	53460
TGML-0427	TRIGLYCERIDES MONO SL NEW	53460
TGML-0455	TRIGLYCERIDES SL	53460
TGML-0497	TRIGLYCERIDES MONO SL NEW	53460
TGML-5515	TRIGLYCERIDES MONO SL NEW	53460
TGML-0515	TRIGLYCERIDES MONO SL NEW	53460
TGML-0517	TRIGLYCERIDES MONO SL NEW p.82	53460
TGML-0700	TRIGLYCERIDES MONO SL NEW	53460
TGML-5710	TRIGLYCERIDES MONO SL NEW	53460
TGML-0707	TRIGLYCERIDES MONO SL NEW	53460
TGML-M690	TRIGLYCERIDES	53460
TGML-5M90	TRIGLYCERIDES	53460
TIBC-0250	Direct TIBC	53904
TIBC-5025	Direct TIBC	53904
TIBC-6007	Direct TIBC	53904
TIBC-M130	Direct TIBC	53904

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REF	PRODUCT NAME	GMDN Code
TIBC-5M30	Direct TIBC	53904
TIBC-6M30	Direct TIBC	53904
TRF2-M230	TRANSFERRIN	59041
TRF2-5M30	TRANSFERRIN	59041
TRF2-6M10	TRANSFERRIN	59041
URSL-0250	UREA UV SL	53587
URSL-5220	UREA UV SL	53587
URSL-6050	UREA UV SL	53587
URSL-0420	UREA UV SL	53587
URSL-5405	UREA UV SL	53587
URSL-6255	UREA UV SL	53587
URSL-0427	UREA UV SL	53587
URSL-0455	UREA UV SL	53587
URSL-0500	UREA UV SL	53587
URSL-5505	UREA UV SL	53587
URSL-6605	UREA UV SL	53587
URSL-0507	UREA UV SL	53587
URSL-M830	UREA	53587
URSL-5M30	UREA	53587
URSL-6M10	UREA	53587
VITD-0043	VITAMIN D CALIBRATOR SET	54474
VITD-4311	VITAMIN D CALIBRATOR SET	54474
VITD-4312	VITAMIN D CALIBRATOR SET	54474
VITD-4313	VITAMIN D CALIBRATOR SET	54474
VITD-4314	VITAMIN D CALIBRATOR SET	54474
VITD-4315	VITAMIN D CALIBRATOR SET	54474
VITD-0049	VITAMIN D CONTROL SET	54475
VITD-4630	VITAMIN D CONTROL SET	54475
VITD-4730	VITAMIN D CONTROL SET	54475
VITD-0250	VITAMIN D	54476
VITD-5021	VITAMIN D	54476
VITD-6005	VITAMIN D	54476

V1a

SPECTRUM

The Creative Approach to Bioscience

Bilirubin (TOTAL AND DIRECT)
Jendrassik Grof

REF: 222 001 (255ml)	100 Test	**REF:** 222 002 (750ml)	300 Test
R1 Sulphanilic Acid	1 x 45 ml	R1 Sulphanilic Acid	2 x 65 ml
R2 Nitrite	1 x 10 ml	R2 Nitrite	2 x 15 ml
R3 Caffeine	1 x 100 ml	R3 Caffeine	3 x 100 ml
R4 Tartarate	1 x 100 ml	R4 Tartarate	3 x 100 ml

SYMBOLS IN PRODUCT LABELLING

EC REP	Authorised Representative		Use by/Expiration Date
IVD	For in-vitro diagnostic use		CAUTION. Consult instructions for use
LOT	Batch Code/Lot number		
REF	Catalogue Number		Manufactured by
	Consult instructions for use		(Xi) - Irritant
	Temperature Limitation		

Intended Use

Spectrum Diagnostics bilirubin reagent is intended for the in-vitro quantitative, diagnostic determination of bilirubin in human serum on both automated and manual systems.

Background

The average level of the bilirubin produced in humans from different sources ranges between 250 to 300 mg/day, of which 85% is derived from the heme moiety of the haemoglobin released from senescent erythrocytes that are destroyed in the reticuloendothelial system. The remaining 15 % is produced from erythrocytes destroyed in the bone marrow and from catabolism of other heme containing proteins such as cytochromes and myoglobin.
After it is produced in the peripheral tissues, bilirubin is transported to the liver in association with albumin. In the liver, bilirubin is conjugated with glucuronic acid for solubilization and subsequent transport through the bile duct and elimination via the digestive tract. Disease or conditions which, through hemolytic processes, produce bilirubin faster than the liver can metabolize it, cause the levels of unconjugated (indirect) bilirubin to increase in the circulation. Bile duct obstruction or damage to hepatocellular structure causes increases in the levels of both conjugated (direct) and unconjugated (indirect) bilirubin in the circulation.

Method

Colorimetric Diazo method.

Assay Principle

The total bilirubin concentration is determined in presence of caffeine by the reaction with diazotized sulphanilic acid to produce an intensely colored diazo dye (560-600 nm). The intensity of color of this dye formed is proportional to the concentration of total bilirubin.
Direct bilirubin is determined in absence of caffeine by the direct reaction with diazotized sulphanilic acid to form red-colored azobilirubin, the color intensity of which measured at 546 nm is proportional to the concentration of the direct bilirubin in the sample.

$$\text{Sulfanilic acid} + NaNO_2 \xrightarrow{HCL} \text{Diazotized sulfanilic acid}$$

$$\text{Bilirubin} + \text{Diazotized sulfanilic acid} \xrightarrow{pH\ 1.4} \text{Azobilirubin}$$

Reagents

Reagent 1 (R1)
Sulfanilic acid 31.0 mmol/l
HCL 0.20 N

Reagent 2 (R2)
Sodium nitrite 28.0 mmol/l

Reagent 3 (R3)
Caffeine 0.28 mol/l
Sodium benzoate 0.55 mol/l

Reagent 4 (R4)
Tartarate 0.99 mol/l
Sodium hydroxide 2.0 N

Reagent 4 contains caustic material.
Corrosive (C)
R35 Causes severe burns.
R41 Risk of serious damage to eyes.
S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S28 After contact with skin, wash immediately with plenty of soap and water.
For further information, refer to the Bilirubin reagent material safety data sheet.

Precautions and Warnings

Do not ingest or inhalate. In case of contact with eyes or skin; rinse immediately with plenty of soap and water. In case of severe injuries; seek medical advice immediately.

Reagent Preparation, Storage and Stability

Spectrum bilirubin reagents are supplied ready-to-use and stable up to the expiry date labeled on the bottles when stored at room temperature.The opened vials are stable for 6 months at the specified temperature if contamination is avoided.

Deterioration

Do not use the Spectrum bilirubin reagents if precipitate forms. Failure to recover control values within the assigned range may be an indication of reagent deterioration.

Specimen Collection and Preservation

Avoid exposure of the specimen to light. If plasma is used, only heparin and oxalate plasma are suitable. Other anticoagulants should not be used. The average half-life of total bilirubin and direct bilirubin in serum is 17 days and few hours respectively.

Stability:

	-20 °C	4 – 8 °C	20 – 25 °C
Total	6 months	7 days	1 day
Direct	6 months	7 days	2 days

Procedure

Total Bilirubin

	Sample blank	Sample
Reagent 1	200 µl	200 µl
Reagent 2	-----	1 drop
Reagent 3	1.0 ml	1.0 ml
Sample	200 µl	200 µl
Mix and incubate for 10 minutes at 20 – 25 °C. then add;		
Reagent 4	1.0 ml	1.0 ml

Mix and incubate for 5 minutes at 20 – 25 °C. Measure absorbance of sample (A_{sample}) against sample blank at 578 nm(560 - 600 nm) The color intensity is stable for 30 minutes.

Direct Bilirubin

	Sample blank	Sample
Reagent 1	200 µl	200 µl
Reagent 2	-----	1 drop
Saline 0.9% NaCl	2.0 ml	2.0 ml
Sample	200 µl	200 µl

Mix and incubate for exactly 5 minutes at 20 – 25 °C. Measure absorbance of sample (A_{sample}) against sample blank at 546 nm (530 - 560 nm).

Calculation

Total bilirubin (mg/dl) = $A_{Sample} \times 10.8$

Direct bilirubin (mg/dl) = $A_{Sample} \times 14.4$

Quality Control

Normal and abnormal commercial control serum of known concentrations should be analyzed with each run.

Performance Characteristics

Precision

Within run (Repeatability)

	Total		Direct	
	Level 1	Level 2	Level 1	Level 2
n	20	20	20	20
Mean (mg/dL)	0.79	4.37	0.299	0.77
SD	0.016	0.18	0.016	0.057
CV%	2.03	4.12	5.35	7.4

Run to run (Reproducibility)

	Total		Direct	
	Level 1	Level 2	Level 1	Level 2
n	20	20	20	20
Mean (mg/dL)	0.82	4.52	0.32	0.82
SD	0.02	0.17	0.023	0.062
CV%	2.44	3.76	7.19	7.56

Methods Comparison

A comparison between Spectrum Diagnostics Bilirubin and a commercial reagent of the same methodology was performed on 20 human sera. A correlation of 0.975 was obtained.

Sensitivity

When run as recommended, the sensitivity of this assay is 0.1 mg/dL (1.7 µmol/L) for both total and direct bilirubin.

Linearity

The reaction is linear up to a total bilirubin concentration of 30 mg/dL (513 µmol/L) and a direct bilirubin concentration of 10 mg/dL (171 µmol/L). Specimens showing higher concentration should be diluted 1+4 with physiological saline and repeat the assay (result×5).

Interfering substances

Haemolysis
Avoid haemolysis since it interferes with the test.

Lipemia
Lipemic specimens interfere with the test.

Drugs
Theophylline and propranolol may cause artificially low total bilirubin levels.

Expected Values

Total Bilirubin

Adults and infants >1 month	< 0.2-1.0 mg/dL	(3.4 -17 µmol/l)
Newborns premature (3-5 d)	10-14 mg/dL	(171-239 µmol/l)

Newborns:

(3-5 d)	4.0 - 8.0 mg/dL	(68-137 µmol/l)
(<48 h)	6.0 - 10.0 mg/dL	(103-171 µmol/l)
(<24 h)	2.0 - 6.0 mg/dL	(34-103 µmol/l)

Direct Bilirubin 0 - 0.3 mg/dL (0 - 51 µmol/L)

Spectrum Diagnostics does not interpret the results of a clinical laboratory procedure; interpretation of the results is considered the responsibility of qualified medical personnel. All indications of clinical significance are supported by literature references.

Analytical Range

Total bilirubin : 0.1 – 30 mg/dL (1.7 – 513 µmol/L)
Direct bilirubin : 0.1 – 10 mg/dL (1.7 – 171 µmol/L)

Waste Disposal

This product is made to be used in professional laboratories.
Please consult local regulations for a correct waste disposal.
S56: dispose of this material and its container at hazardous or special waste collection point.
S57: use appropriate container to avoid environmental contamination.
S61: avoid release in environment. refer to special instructions/safety data sheets.

References

1. Balistreri WF, Shaw LM. Liver function. In: Tietz NW, ed. Fundamentals of clinical chemistry.3 rd ed. Philadelphia:WB Saunders: 1987:729-761.
2. Malloy HT, Evelyn KA. The determination of bilirubin with the photoelectric colorimetric method.J Biol Chem.1937:119:481-490.
3. Tietz NW, ed. Clinical guide to laboratory tests. 3rd ed.Philadephia: WB saunders; 1995:268-273.

ORDERING INFORMATION	
CATALOG NO.	**QUANTITY**
222 001	100 test
222 002	300 test

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