PrecisionBioLogic

CRYO*check*™ IVD

HEMOSTASIS CONTROL PLASMAS

WEAK LUPUS POSITIVE CONTROL

Intended Use

CRYO*check* Weak Lupus Positive Control is prepared from human plasma and is recommended for use as a positive control in assays for lupus anticoagulant.

Summary and Principle

An association between circulating anticoagulants and systemic lupus erythematosus (SLE) was first described in 1952[1]. In 1972 the term "lupus anticoagulant" (LA) was used to describe these non-specific, circulating inhibitors[2]. The designation LA is still used today although it is now evident the majority of these patients do not suffer from SLE[3]. The presence of LA has been increasingly associated with a variety of disorders such as unexplained thrombosis and recurrent fetal loss[4,5].

LA are immunoglobulins, usually of the IgG, IgM or IgA classes, which are directed against anionic phospholipids or phospholipid- plasma protein complexes causing interference with in vitro phospholipid dependent coagulation tests. LA are clinically distinct members of a broader group of antiphospholipid antibodies (APA) characterized by antigenic protein targets such as β_2 glycoprotein 1 and prothrombin. APA include LA as well as anticardiolipin, antiphosphatidylserine, and antiphosphatidylethanolamine antibodies[6,7,8].

The SSC Subcommittee has specified diagnostic criteria for the detection of LA[9].

Reagents

CRYO*check* Weak Lupus Positive Control contains citrated human plasma collected from donors that have tested positive in accordance with the revised criteria of the SSC Subcommittee for the Standardization of Lupus Anticoagulants[9]. Human plasmas are processed in a manner that yields platelet-poor plasmas. Plasma is then buffered, aliquoted and frozen at very low temperatures.

All blood products should be treated as potentially infectious. Source material from which this product was derived was found to be negative when tested in accordance with current required tests for transfusion-transmitted diseases. No known test methods can offer assurance that products derived from human blood will not transmit infectious agents. Accordingly, these human blood-based products should be handled and discarded as recommended for any potentially infectious human specimen[10].

Storage, Preparation and Handling

When stored at -40 to -80°C, CRYO*check* Weak Lupus Positive Control is stable to the end of the month indicated on the product packaging.

Thaw each vial at 37 °C (± 1 °C) in a waterbath. **The use of a dry bath or heating block for thawing is not recommended**. Thawing times are important and should be strictly adhered to. The use of a timer is recommended. Refer to the Thawing Table for recommended thawing times based on aliquot size. Allow thawed plasma to acclimate to room temperature (18 to 25 °C) and invert gently prior to use.

Thawing Table	
Aliquot Size	**37 °C (± 1 °C) Waterbath**
0.5 mL	3 minutes
1.0 mL	4 minutes

CRYO*check* Weak Lupus Positive Control may be used for up to eight hours after thawing, if capped in the original vial and maintained at 2 to 8 °C. Allow refrigerated plasma to acclimate to room temperature (18 to 25 °C) and invert gently prior to use. **Thawed material should be discarded after eight hours and should not be refrozen**.

Availability

Product	Catalog #	Format
Weak Lupus Positive control	CCWLP-05	25 vials x 0.5 mL
	CCWLP-10	25 vials x 1.0 mL

Instruments

Each lab should prepare the local instrument in accordance with the manufacturer's instructions for use.

Procedure

After thawing and preparing CRYO*check* Weak Lupus Positive control, use in accordance with established laboratory procedures for the quality control of assays for LA.

Materials Provided

- CRYO*check* Weak Lupus Positive Control

Materials Required but not Provided

- Waterbath capable of maintaining 37 °C (± 1 °C)
- Assay reagents
- Coagulation instrument or assay system
- Sample cups
- Plastic disposable pipettes
- Volumetric pipettes

Results and Interpretation

Control results should fall within the laboratory's established QC ranges provided the integrity of the test system has not been compromised.

Quality Control

Each laboratory should establish its own quality control (QC) ranges using acceptable statistical methods. These QC ranges may then be used to monitor and validate the integrity of the test system[11]. For all coagulation tests, the laboratory must include at least two levels of control for every eight hours of operation and any time a change in reagents occurs[12].

Limitations of the Procedure

When proper control values are not obtained, assessment of each component of the test system including reagents, control plasmas, instrumentation and operator technique must be undertaken in order to ascertain that all other components are functioning properly.

Expected Values

Quality control testing yielded the following results with a representative lot of CRYO*check* Weak Lupus Positive control. Results may vary depending on instrument, method and technique used.

Lupus Anticoagulant Assays	Result	Interpretation
APTT (Lupus Sensitive)	69.3 sec	Positive
APTT (1:1 Normal Mix)	46.2 sec	Positive
APTT (1:1 Saline Mix)	67.7 sec	Positive
Kaolin Clotting Time (KCT)	166 KCT units	Positive
dilute Russell's Viper Venom Time (dRVVT)	1.3 ratio	Positive
Hexagonal Lupus Anticoagulant	14.9 sec	Positive
Platelet NeutralizationProcedure (PNP)	16.0 sec	Positive

Performance Characteristics

When used in accordance with established testing procedures for LA[9], CRYO*check* Weak Lupus Positive Control demonstrates the following characteristics:

- CRYO*check* Weak Lupus Positive Control shows prolongation in phospholipid-dependent clotting tests.
- The clotting time of a mixture of CRYO*check* Weak Lupus Positive Control and pooled normal plasma is significantly longer (≥3 SD)than that of pooled normal plasma and non-LA patient plasma.
- CRYO*check* Weak Lupus Positive Control is corrected by the addition of lysed, washed platelets or phospholipid liposomes containing phosphatidylserine or hexagonal phase phospholipids.
- CRYO*check* Weak Lupus Positive Control is non-specific for any individual clotting factor.

Each laboratory should establish their own diagnostic criteria for LA assays. CRYO*check* Weak Lupus Positive Control is subject to the limitations of the assay system in use.

Bibliography

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Symbols Used

IVD	In vitro diagnostic medical device		Biological risks
LOT	Batch code		Manufacturer
REF	Catalogue number	EC REP	Authorized representative in the European Community / European Union
	Use by	**Rx ONLY**	For prescription use only
	Temperature limit		Consult electronic instructions for use

EC REP European Authorized Representative (Regulatory affairs only)
Emergo Europe— Westervoortsedijk 60, 6827 AT Arnhem, The Netherlands

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