



**SYPHILIS SEROLOGY KIT**  
**DIRECTIONS FOR USE**

**VDRL Stabilised Reagent Kit: For Serodiagnosis Of Syphilis.**

**SUMMARY**

Syphilis is a venereal disease caused by the spirochaete micro-organism *Treponema pallidum*. This organism cannot be cultured on artificial media and so the diagnosis of syphilis depends on the correlation of clinical data with the specific antibody demonstrated by serological tests. There are two different techniques for the detection of syphilis. TPHA tests, which detect antibodies to *Treponema pallidum*, and non-treponemal serologic tests, which detect an antibody-like substance in infected people called Reagin.

**PRINCIPLE**

When used by the recommended techniques, the reagent will aggregate in the presence of reagin. No aggregation usually indicates the absence of reagin (see **Limitations**).

**KIT DESCRIPTION**

Lorne VDRL Stabilised Reagent Kit is a non-treponemal test for the serodiagnosis of syphilis. The kit consists of a stabilised VDRL antigen and a positive and negative control. The stabilised VDRL antigen is an ethanolic solution containing cholesterol (0.9%), bovine heart cardiolipin (0.03%) and lecithin (0.21%). For lot reference number and expiry date see **Vial Labels**.

**STORAGE**

Do not freeze. Reagent vials should be stored at 2 - 8°C on receipt. Prolonged storage at temperatures outside this range may result in accelerated loss of reagent reactivity.

**SPECIMENS**

Fresh serum, plasma or cerebrospinal fluid. Stable 7 days at 2-8°C or three months at -20°C. Samples with the presence of fibrin should be centrifuged before use. Do not use highly hemolized or lipemic samples. Specimens should be drawn with or without anticoagulant using an aseptic phlebotomy technique. If testing is delayed specimens can be stored at 2-8°C for 7 days or for up to 3 months at or below -20°C. Specimens must be free from bacterial contamination and haemolysis.

**PRECAUTIONS**

1. The kit is for *in-vitro* diagnostic use only.
2. Do not use kit past expiration date (see **Vial and Box Labels**).
3. Protective clothing should be worn when handling the reagents, such as disposable gloves and a laboratory coat.
4. No known tests can guarantee 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.
5. Control +: H319 - Causes serious eye irritation. Follow the precautionary statement given in the SDS.

**DISPOSAL OF KIT REAGENT AND DEALING WITH SPILLAGES**

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

**CONTROLS AND ADVICE**

1. It is recommended that the Positive and Negative Controls be tested in parallel with each batch of tests. Tests must be considered invalid if controls do not show expected results.
2. All the reagents must be allowed to reach 18-25°C before use.
3. Shake the reagents well before use to ensure homogeneity.
4. Do not interchange components between different kits.
5. The use of kit 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 kit is in use.
6. The user must determine the suitability of the kit for use in other techniques.

**KIT COMPONENTS SUPPLIED**

- 1) VDRL Antigen Stabilised (5 mL); Solution containing Cardiolipin 0.3 g/L, Lecithin 2.1 g/L and Cholesterol 9 g/L in phosphate buffer 1.5 mmol/L, pH 7.0, preservative.
- 2) Control + (1 mL); Artificial serum with a Reagin titre  $\geq$  1/8.
- 3) Control - (1 mL); Animal serum, preservative.

**MATERIALS AND EQUIPMENT NOT SUPPLIED**

- a) Glass ring slides.
- b) Adjustable pipette.
- c) Glass test tubes (12 x 75 mm).
- d) Mechanical rotator with adjustable speed of around 180 rpm.
- e) Centrifuge

**RECOMMENDED QUALITATIVE TECHNIQUE**

1. Place on separate test circles of the agglutination slide: 50  $\mu$ l of undiluted patient serum, 50  $\mu$ l of Positive Control and 50  $\mu$ l of Negative Control.
2. Mix the VDRL stabilised antigen gently and add 20  $\mu$ l of the VDRL reagent to each sample.
3. Mix the reagent and sample drops with a stirrer and spread over the entire area of each test circle.
4. Gently rotate the slide for four (4) minutes on a mechanical rotator set at 180 rpm.
5. After 4 minutes, examine each test circle for agglutination and record the results.

**INTERPRETATION OF QUALITATIVE RESULTS**

- 1) **Positive:** Visible agglutination constitutes a positive result and within accepted limitations of test procedure, indicates presence of Reagin associated with syphilis.
- 2) **Negative:** No visible agglutination constitutes a negative result and within the accepted limitations of the test procedure, indicates the absence of Reagin associated with syphilis.

**RECOMMENDED SEMI-QUANTITATIVE TECHNIQUE**

1. Make doubling dilutions of the specimen in 9 g/L saline up to 1/16 as follows:

Dilution	Serum	9 g/L Saline
1/2	100 $\mu$ l undiluted serum	100 $\mu$ l
1/4	100 $\mu$ l undiluted serum	300 $\mu$ l
1/8	100 $\mu$ l undiluted serum	700 $\mu$ l
1/16	100 $\mu$ l undiluted serum	1500 $\mu$ l

2. Test each serum specimen dilution in exactly the same way as for the **Qualitative Technique** above.

**INTERPRETATION OF SEMI-QUANTITATIVE RESULTS**

1. The titre is expressed as reciprocal of the highest dilution showing macroscopic agglutination: e.g. if this occurs in dilution 1/8, the titre is 8.

**INTERPRETATION OF RESULTS**

1. **Reactive:** Medium to large clumps constitutes a positive test result and within the accepted limitations of the test procedure, indicates the presence of reagin.
2. **Weakly Reactive:** Finely dispersed particles with small clumps constitute a weak positive test result and within the accepted limitations of the test procedure indicates the presence of regain.
3. **Negative:** Finely dispersed particles with no clumps constitute a negative result and within the accepted limitations of the test procedure, indicates the absence of reagin.

## STABILITY OF THE REACTIONS

Slide tests should be interpreted straight after the 4-minute rotation period to avoid the possibility that a negative result may be incorrectly interpreted as positive due to drying of the reagent. Tube tests must be read immediately after they have been re-shaken.

## LIMITATIONS

1. The VDRL test is non-specific for syphilis. All reactive samples should be retested with treponemetic methods such as TPHA and FTA-Abs to confirm the results.
2. A non reactive test result by itself does not exclude a diagnosis of syphilis.
3. False positive results have been reported in diseases such as infectious mononucleosis, viral pneumonia, toxoplasmosis, pregnancy and auto-immune disease.
4. Haemoglobin ( $\leq 10$  g/L), bilirubin ( $\leq 20$  mg/dL), lipaemia ( $\leq 10$  g/L) and rheumatoid factors ( $\leq 300$  IU/mL) do not interfere. Other substances may interfere<sup>4</sup>.
5. False positive or false negative results may also occur due to:
  - Contamination of test materials
  - Improper storage of test materials or omission of reagents
  - Deviation from the recommended techniques

## SPECIFIC PERFORMANCE CHARACTERISTICS

1. The kit has been characterised by the procedures mentioned in the **Recommended Techniques**.
2. Prior to release, each lot of Lorne VDRL Kit is tested by the **Recommended Techniques** to ensure suitable reactivity.
3. The reagent sensitivity is calibrated against the WHO 1<sup>st</sup> International Standard for human syphilitic plasma (NIBSC reference number 05/132).
4. Prozone effect: No prozone effect was detected up to titres of 1/128.
5. Diagnostic sensitivity: 100%.
6. Diagnostic specificity: 100%.

## DISCLAIMER

1. The user is responsible for the performance of the kit by any method other than those mentioned by the manufacturer in the **Recommended Techniques**.
2. Any deviations should be validated prior to use using established laboratory procedures.

## BIBLIOGRAPHY

1. George P.Schimid, Current Opinion on Infectious Diseases 1994; 7: 34-40.
2. Sandra A.Larsen et al. A manual of test for syphilis American Public Health Association 1990: 1-192.
3. Sandra A.Larsen et al. Clinical Microbiology Reviews 1995; 8 (1): 1-21.
4. Young DS. Effects of drugs on clinical laboratory tests, 4<sup>th</sup> edition, AACC Press, 1995.

## AVAILABLE KIT SIZES








Kit Size	Catalogue Number
250 Tests	046511A

For the availability of other sizes, please contact:

### Lorne Laboratories Limited

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## TABLE OF SYMBOLS

	Batch Number		<i>in-vitro</i> Diagnostic
	Catalogue Reference		Store At
	Expiry Date		Manufacturer
	Read Pack Insert		