BRUCELLA ABORTUS SLIDE

Determination of antibodies associated to Brucella Abortus by means of coloured bacterial suspension on slide

TEST SUMMARY

Slide and tube agglutination test for the qualitative and semi-quantitative detection of antibodies associated to Brucella Abortus infections.

Samples containing the specific antibody cause the agglutination of inactivate bacteria present in suspension. The intravitral coloring allows an easier reading of the formation of the agglutinates.

High levels of agglutinating antibodies are indicative of infection by these microorganisms.

SAMPLES

Fresh clear serum. Stability 7 days at 2-8°C or 3 months at ~30°C.

Do not freeze repeatedly. The samples with presence of fibrin should be centrifuged before testing. Do not use highly hemolyzed or lipemic samples.

Bring to room temperature before analysis.

REAGENTS

Suspension: Inactivated and intravitral colored bacterial suspension in glycine buffer pH 8.2; preservatives.

MATERIALS REQUIRED BUT NOT SUPPLIED

Saline Solution NaCl 9 g/L; Positive Control serum and Negative Control serum. Slide and stirrer. Automatically microepette. Mechanical stirrer at 100 r.p.m. Incubator 37°C. Current laboratory instrumentation.

PRECAUTIONS

The reagent may contain non-reactive components and preservatives of various kinds. For precautionary purposes, however, contact with skin and ingestion should be avoided. Use the normal precautions for behavior in the laboratory.

REAGENTS PREPARATION

Reagents are ready to use. Bacterial suspension has to be carefully resuspended shaking it more times for inversion. Bring to room temperature before analysis Stability: until expiration date on label stored at 2-8°C. Do not freeze.

PROCEDURE

SLIDE AGGLUTINATION (QUALITATIVE)

<table>
<thead>
<tr>
<th>Reagents</th>
<th>Sample</th>
<th>Positive Control</th>
<th>Negativ Control</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sample</td>
<td>20 µl</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Positive control</td>
<td>--</td>
<td>50 µl</td>
<td>50 µl</td>
</tr>
<tr>
<td>Negative Suspension</td>
<td>50 µl (1 gtt)</td>
<td>50 µl (1 gtt)</td>
<td>50 µl (1 gtt)</td>
</tr>
</tbody>
</table>

Mix using a disposable stirrer, spread homogeneously over the entire area enclosed by the ring and shake it with a rotary motion or with a mechanical stirrer at 80-100 rpm for 1 minute.

SLIDE AGGLUTINATION (TITRATION)

Approximate titre

<table>
<thead>
<tr>
<th>Sample</th>
<th>1/20</th>
<th>1/40</th>
<th>1/80</th>
<th>1/160</th>
<th>1/320</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sample size</td>
<td>80 µl</td>
<td>50 µl</td>
<td>20 µl</td>
<td>50 µl</td>
<td>5 µl</td>
</tr>
<tr>
<td>Suspension</td>
<td>10 µl</td>
<td>50 µl</td>
<td>10 µl</td>
<td>50 µl</td>
<td>5 µl</td>
</tr>
</tbody>
</table>

Mix using a disposable stirrer, spread homogeneously over the entire area enclosed by the ring and shake it with a rotary motion or with a mechanical stirrer at 80-100 rpm for 1 minute.

TUBE AGGLUTINATION (semiquantitative)

Is suggested the use of LTA Macro suspensions and furthermore LTA Micro suspensions which have buffers purposely studied to guarantee a certain analysis result. The analytical method is anyhow reported to establish the titre with slide suspensions even if this technology has underlying limits.

1. Prepare a row of tube test for each sample as follows:

<table>
<thead>
<tr>
<th>Titre</th>
<th>1/20</th>
<th>1/40</th>
<th>1/80</th>
<th>1/160</th>
<th>1/320</th>
<th>1/640</th>
</tr>
</thead>
<tbody>
<tr>
<td>NaClg g/L</td>
<td>1.9 ml</td>
<td>1 ml</td>
<td>1 ml</td>
<td>1 ml</td>
<td>1 ml</td>
<td>--</td>
</tr>
<tr>
<td>Sample</td>
<td>100 µl</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
</tbody>
</table>

2. Prepare 1 tube for Positive Control and 1 tube for Negative Control with 0.1 ml of control + 0.9 ml of NaCl g/L each.
3. Add 50 µl (1 gtt) of suspension to each tube.
4. Mix thoroughly and incubate tube test at 37°C for 24 h.

RESULTS INTERPRETATION

SLIDE AGGLUTINATION

Examine macroscopically the absence or presence of agglutination *after 1 minute* by comparing the results with the Positive and Negative control. Agglutination into time established means positivity. For each positive result it is advisable to confirm the titre with the test-tube titration.

The results obtained with slide titration method are roughly equivalent to those which would occur in tube test with serum dilutions. Respectively: 1/20 – 1/40 – 1/160 – 1/320 – 1/640.

TUBE AGGLUTINATION

Examine macroscopically the absence or presence of agglutination by comparing the results with the tubes of Positive and Negative Control. Partial agglutination is a sign of positive reaction. The titre of the serum examined is due to the most higher dilution in which is showed a feeble positivity.

REFERENCE VALUES

Titre ≥ 1/80 indicate a recent infection.

In case of a positive result with a low titre, it is significant for the diagnosis verify the increase of titre between samples taken at a distance of days.

If the titre remains unchanged it may be a previous contact or previous vaccination. A single positive result has less significance than the demonstration of a rising or falling antibodies titre as evidence of infection.

The level of “normal” antibodies to these organisms varies in different countries and different communities. It is recommended that each laboratory establish its own reference range.

NOTE

- In some geographical areas with a high prevalence of febrile antibodies, it is recommended to dilute the sample 1/4 with NaCl 9 g/L before to perform the assay.
- As with any diagnostic procedure, if the results are incompatible with the clinical presentation, the physician should evaluate the data obtained using this test by comparing them with other clinical information.
- In vitro diagnostic use only.

CALIBRATION/QUALITY CONTROL

There is not any International Reference for the sensitivity standardization of these reagents. For this reason, LTA uses an internal control that contains animal serum with antibodies anti-Brucella, and titred with commercial reagents of certified quality.

Use of control sera is recommended as reference; the positive control ought to show a partial or complete agglutination, instead the negative control ought to show no agglutination.

Controls should be ever used to distinguish an eventual agglutination of the bottom of reagent.

Controls should be used as described in procedures or even to be treated as samples (dilution, ecc.).

The following controls are available on request:

- **BS00011**: 3 x 0.5 ml Febrile Positive Control (0.5 ml Salmonella, 0.5 ml Brucella, 0.5 ml Proteus)
- **BS00020**: 1 x 1 ml Febrile Negative Control

**TEST PERFORMANCE**

**Sensitivity**

The method sensitivity decrease at low temperature. Better results will be obtained at higher temperature up to 10°C.

**Interference**

No interference was observed by the presence of:

- hemoglobin ≤ 1000 mg/dl
- bilirubin ≤ 20 mg/dl
- lipids ≤ 1000 mg/dl
- rheumatic factor < 300 U/ml

Recent infection, immunodepression or antibiotic treatment can do false negativity.

Cross-reaction with Brucella have been encountered in cases of infection or vaccination with some strains of Vibrio cholerae, Pasteurella, Proteus OX19 and Y. enterocolitica (serotype 9).

**WASTE DISPOSAL**

Product is intended for professional laboratories. Waste products must be handled as per relevant security cards and local regulations.

**PACKAGING**

**CODE BS00911**: Suspension Bucella Abortus slide 1 x 5 ml

**REFERENCES**


**MANUFACTURER**

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**SYMBOLS**

- **IVD**: Only for IVD use
- **LOT**: Lot of manufacturing
- **REF**: Code number
- **S**: Storage temperature interval
- **E**: Expiration date (year, month)
- **W**: Warning, read enclosed documents
- **B**: Biological risk

- **Mod. 01.06 (ver. 3.0 - 02/05/2018)**