Clostridium perfringens Alpha Toxin ELISA KIT

BIO K 266

Enterotoxaemia is a fatal enteric disease that affects all species of domestic animals and is attributable to a toxigenic type of Clostridium perfringens. Most animal diseases due to C. perfringens are intestinal and involve types B, C or D. Type A has been implicated in rare outbreaks of gastritis and haemolytic disease of ruminants (enterotoxemic jaundice, the yellows, yellow lamb disease) and in hemorrhagic enteritis in cattle, horses, dogs and infant alpacas. Clostridium perfringens type A causes necrotic enteritis in poultry and a mild form of food poisoning in humans. Demonstration of alpha toxin in the contents of the small intestine is the only way to definitively diagnose enterotoxemia. For that purpose, small amounts of clarified fluid are injected into the tail vein of mice. Death after more than a few minutes post injection constitutes presumptive evidence of enterotoxemia. Other toxins produced by C. perfringens have to be neutralized by specific antisera. By using ELISA method, it is possible to detect alpha toxin in biological fluids (intestinal, peritoneal or pericardic fluid) or in culture supernatants in less than 3 hours. The test can be used to type an unknown strain in conjunction with beta and epsilon Elisa test kits.

<table>
<thead>
<tr>
<th>Toxino-types</th>
<th>Alpha</th>
<th>Beta</th>
<th>Epsilon</th>
<th>Iota</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>++</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>B</td>
<td>+</td>
<td>++</td>
<td>+</td>
<td>-</td>
</tr>
<tr>
<td>C</td>
<td>+</td>
<td>++</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>D</td>
<td>+</td>
<td>-</td>
<td>++</td>
<td>-</td>
</tr>
<tr>
<td>E</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>++</td>
</tr>
</tbody>
</table>

Reliable Results
The use of monoclonal antibody as conjugate ensures excellent specificity and very reliable results.

Ease-of-Use
Minimal hands-on-time
Room temperature incubation
Results available in 140 minutes for single or batch testing

Flexibility
Results can be read visually or spectrophotometrically.

EIA Procedure
1- Microplate coated with polyclonal antibody
2- Add samples and positive control.
   Incubate 1 hour at 21°C +/- 3°C
   Wash
3- Add conjugate.
   Incubate 1 hour at 21°C +/- 3°C
   Wash
4- Add monocomponent TMB
   Add stop solution.
   Wait 10 minutes.
   Read at 450 nm
Example of results

Direct colony hybridation (DCH)

<table>
<thead>
<tr>
<th></th>
<th>+</th>
<th>-</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>+</td>
<td>235</td>
<td>0</td>
<td>235</td>
</tr>
<tr>
<td>-</td>
<td>3</td>
<td>0</td>
<td>3</td>
</tr>
</tbody>
</table>

Specificity: NA
Sensitivity: 99 %

Typing of strains from various animal using Bio-X Kits

<table>
<thead>
<tr>
<th></th>
<th>Bovine Strains</th>
<th>Ovine &amp; Caprine Strains</th>
<th>Ovine &amp; Caprine Strains</th>
<th>Porcine Strains</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alpha</td>
<td>n=69 98.55 %</td>
<td>n=35 100 %</td>
<td>n=22 100 %</td>
<td>n=45 100 %</td>
</tr>
<tr>
<td>Beta</td>
<td>0 %</td>
<td>0 %</td>
<td>18.18 %</td>
<td>11.11 %</td>
</tr>
<tr>
<td>Epsilon</td>
<td>0 %</td>
<td>68.57 %</td>
<td>63.64 %</td>
<td>2.22 %</td>
</tr>
</tbody>
</table>

Composition of the kit

BIO K 266 Clostridium perfringens

Alpha Toxin ELISA KIT

- 2 plates of 12 strips for a total of 96 tests
- 1 bottle of washing solution (20 X)
- 1 vial of dilution buffer (5 X)
- 1 vial of conjugate (ready to use)
- 1 bottle of chromogen (ready to use)
- 1 bottle of positive control (ready to use)
- 1 bottle of stopping solution (ready to use)
- 1 year of stability at 4°C