

Mouse Monoclonal Anti Clostridium Perfringens Type D epsilon Toxin Antibody (Clone 4D6)

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Technology description

Summary:

The 4D6 monoclonal antibody can detect nanogram quantities by Western blotting of both the Clostridium perfringens epsilon proto-toxin as well as the activated toxin

Description:

The epsilon toxin is one of 12 protein toxins produced by Clostridium perfringens, a Gram positive, anaerobic spore-forming rod. There are five strains of C. perfringens, designated A through E. Each strain produces a unique spectrum of toxins. The epsilon toxin is made by types B and D. This toxin is a pore-forming protein; it causes potassium and fluid leakage from cells. In addition to the epsilon toxin, Clostridium perfringens type D strains produce alpha toxin and type B strains produce alpha and beta toxins. C. perfringens type B causes severe enteritis in young calves, foals, lambs and piglets. Type D causes enterotoxemia in sheep and goats and, on rare occasions, in cattle. All five strains can infect wounds in any species.

The innovation available for licensing is a monoclonal antibody (4D6) that can be used as a diagnostic tool to detect Epsilon toxin, a classified bio-terrorism agent. The researchers have observed in the lab that His-tagged epsilon toxoid forms spontaneous SDS-resistant multimers. 4D6 can also detect multimer forms of protein. 4D6 can also detect, native un-cleaved ETX proto-toxin as well trypsin cleaved fragments that have higher electrophoretic mobility.

Application area

Detection of the Clostridium perfringens epsilon toxin

Advantages

- Probably the only D epsilon toxin monoclonal antibody available commercially
- Can detect as little as 625pgs of recombinant epsilon mutant toxoid.
- Easy detection with anti-mouse-IgG-HRP

Institution

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