Clostridium perfringens Enterotoxin alpha

01-509　　50 μg

Storage: Ship at 4℃ or -20℃ and store at -20℃ or -80℃ (for long-term storage).

Applications:

1) For the study of Claudin localization in cells
2) For the study of tight junctions
3) Western blot
4) SDS-PAGE
5) ELISA

Form: 280 μg/ml in 50% glycerol, 10 mM sodium phosphate buffer (pH 6.7)

Purity: Over 95% purity by non-denaturing polyacrylamide gel electrophoresis (CBB staining)

Activity confirmed: The cytotoxic activity was examined by using Vero cells. The surviving fraction of the cells exposed to 1 ug/ml of CPE for 30 min was less than 40%.

Background: *Clostridium perfringens* enterotoxin (CPE) is a protein toxin produced by Gram-positive bacteria, *C. perfringens.* CPE destroys cell membrane structure of animals by its phospholipase activity after binding to the membrane of Claudin family proteins, which are components of tight junction of epithelial cell membrane. CPE binds to Claudins 3, 4, 6, 7, 8 and 14, but not to Claudins 1, 2, 5 and 10.

This product was highly purified from *Clostridium perfringens,* strain NCTC8239 by the method of Sakaguchi et al [1]. The molecular weight is 35 kD. The cytotoxic activity was examined by using Vero cells. The surviving fraction of the cells exposed to 1 μg/ml of CPE for 30 min was less than 40%.

Data Link UniProtKB/Swiss-Prot P01558 (ELTB_CLOPE)

References:

1. Sakaguchi G *et al* "Simplified method for purification of Clostridium perfringens type A enterotoxin." *Appl Microbiol* **26**:762-767 (1973) PMID: 4357653
2. Fujita K *et al* "Clostridium perfringens enterotoxin binds to the second extracellular loop of claudin-3,a tight junction integral membrane protein." *FEBS Lett* **476**: 258-261 (2000) PMID: 10913624

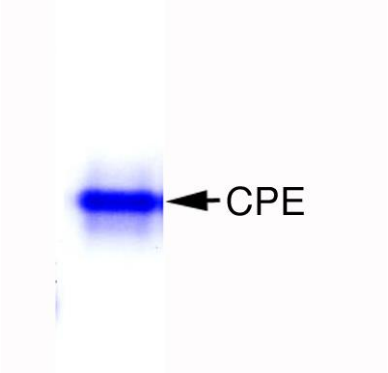

Fig.1 Nondenaturing polyacrylamide gel electrophoresis of CPE

＊This product is for research use only, not for human use.

＊MSDS (Material Safety Data Sheet) is in the next page.

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Material Safety Data Sheet
Clostridium perfringens Enterotoxin alpha

Harzardous Ingradient

C. perfringens enterotoxin alpha (CPE) highly purified from culture medium of *Clostridium perfringens* strain NCTC8239 (0.2~1.0 mg/ml toxin in 50% glycerol, 10 mM sodium phosphate buffer, pH 6.7).

Health Hazard Data

The LD_{50} of pertussis toxin is 3~5 ug/kg in mice and 13 ug/kg in sheep and calf by intravenus injection. The toxicity of CPE is less than 1/2,000 of that of botulinus and tetanus toxins.

Emergency Procedure

If the toxin is accidentally swallowed, induce vomiting.
If skin pricking occurs accidentally, bleed and perform vigorous flushing of the area with large amounts of water. If injection occurs, seek a physician's advice immediately.

Handling

It should be handled carefully by persons with expertise in knowledge and techniques for the safe handling of bacterial toxins. Avoid mouth pipetting. Wear protective gloves on handling the toxin. Avoid contact with open wounds. Wash thoroughly any area of the body that makes contact with the toxin.

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Inactivation

The toxin is relatively heat-resistant but it can be inactivated by boiling for 30 min.

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