Bio Academia
Manufacturer

AS ONE

Anti-Vero Toxin1 (E. coli) / Shiga Toxin (S. dysenteriae) antibody, rabbit serum

Cat. # 64-025 100µl

Description

Vero toxin 1 (VT1) is produced by Vero toxin1-producing E. coli (VTEC) and has lethal activity to Vero cells. The primary structure of VT1 is identical or nearly identical to Shiga toxin (Stx) produced by Shigella dysenteriae serotype 1 and also called Slt 1 (Shiga-like toxin 1). VT1 is composed from one A subunit and five B subunits. Some E. coli strains produce both Slt1 and Slt2, and they share sequence identity of 55 %, but they are immunologically distinct.
To express the activity of VT/Stx, interaction with specific receptor Gb3 is indispensable. VT/Stx removes the 4324th adenine of 28S RNA of ribosome, inhibits protein synthesis and causes cell death. After invasion into cell subunit A is cut by furin to give A1 and A2. A1 is a catalytic fragment, and A2 is required for holo-enzyme formation by combining subunit B.

Applications

1) Western blot (2,000 fold dilution) (Fig. 1)
2) Immunoprecipitation (Fig. 2)
3) ELISA
Other applications have not been tested.

Specification

Immunogen: Initial immunization by VT1 toxoid and booster by VT1 toxin.

Reactivity: VT1 of E. coli VTEC strain and Shiga toxin of Shigella dysenteriae 1.

Form: Rabbit antiserum added with 0.09% sodium azide.

Storage: Ship at 4°C. Upon arrival, centrifuge, aliquot and store at -20°C

Data Link GenBank M16625 Shiga-like toxin I subunit A and subunit B
UniProtKB/Swiss-Prot Q9FBI2 Shiga toxin subunit A
UniProtKB/Swiss-ProtQ7BQ98 Shiga toxin subunit B

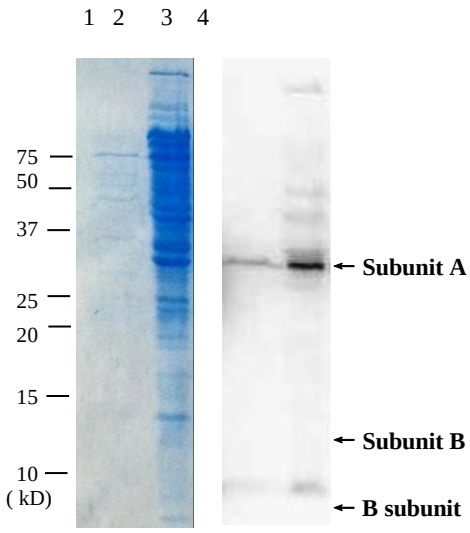

Fig.1.Detection of VT1 by Western blot with anti-VT1 antibody.
1. SDS-PAGE of culture medium of VTEC, stained with CBB
2. SDS-PAGE of crude extracts of VTEC cells, stained with CBB
3. Western blot of culture medium of VTEC
4. Western blot of crude extracts of VTEC cells.
Ani-VT1 antibody was used at 1/2,000 dilution

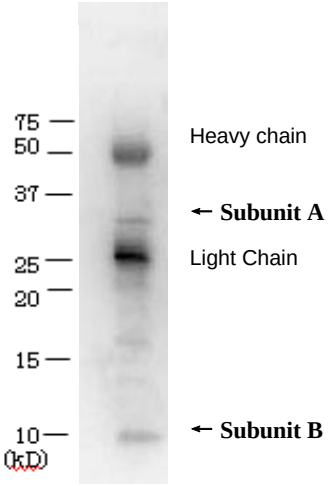

Fig. 2. Immunoprecipitation of VT1 from culture medium of VTEC with anti-VT1 antibody. Arrows shows subunit A and subunit B of VT1. Heavy chain and Light chain indicate those of IgG.

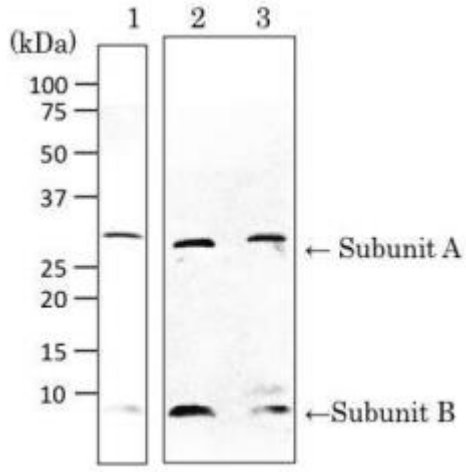

Fig.3. Detection of VT1 and VT2 by Western blot with ant-Vero Toxin .
1. Culture medium of E. coli O157:H7
2. Purified VT1
3. Purified VT2

Arrow shows subunit A and subunit B.

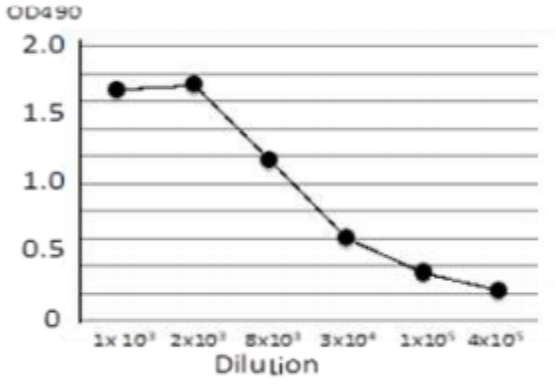

Fig. 4. Titration of antibody reactivity of anti-Vero Toxin by indirect ELISA using crude extract of E.coli O157:H7
The wells of plate were coated with crude extract of O157:H7 (100 µl, 1 µg/ml). After blocking with 5% skim milk, 100 µl of antibody at the indicated dilution was added to the each well. HRP-conjugate goat anti-mouse IgG (100µl 1x2000 dilution) was added. Color was developed with orthophenylenediamine as substrate. Optical densities (OD) measured at 490nm.