Anti-*Escherichia coli* LT toxin Subunit A antibody, mouse monoclonal (ec-01)

64-022　　100 μg

Shipping and Storage: Ship at 4C and store at -20C. Do not freeze.

Immunogen: Crude extract of *Escherichia coli* (ETEC LT+) cells

Specific Reactivity: Reacts with subunit A of LT toxin of *Escherichia coli*

Applications:

1. Western blotting　(1/500~1/1,000)　　2. ELISA　(assay dependent)

This antibody is useful for detecting food poisoning *E. coli* strains

Background: Pathogenic *Escherichia coli* is one of the major causative agents of food poisoning. One group of them, enterotoxigenic *E. coli* (ETEC) produces some toxins. Heat labile enterotoxin (LT) produced by ETEC is similar to cholera toxin (CT). The identity of the amino acid sequences of LT and CT is about 80% and both toxins are consist of one subunit A and five subunit B. LT continuously activates adenylate cyclase and elevated level of cAMP inhibits absorption of Na+ by intestinal villi cells, and stimulates secretion of Cl- by villi and crypt cells, thus causing diarrhea. Subunit A possesses signal peptide of the amino acids 1-18, and the mature form consists of 19-258 amino acids　(MW: 28.8 kDa) . Subunit B has signal peptide of 1-21, and the mature form consists of 22-124 amino acids (MW: 11.8 kDa). The holotoxin MW is 86.4 KDa.

Isotype: mouse IgG1

Product: 0.5 mg/ml in PBS, 50% glycerol, filter sterilized.

Purity: IgG, affinity-purified with Protein A/G mix

Data Link: UniProtKB: P06717 (Heat-labile enterotoxin A chain)

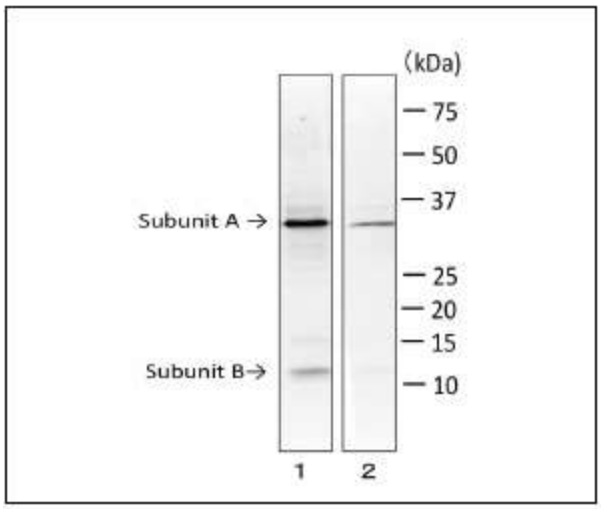

Fig.1. Detection of LT toxin in extract of *E. coli* ETEC strain by Western blotting with monoclonal antibody (MAb ec-01).

1. Culture medium of *E. coli* (ETEC, LT+) blotted with rabbit anti-*E. coli* LT toxin antibody (BioAcademia, 64-020)
2. Culture medium of *E. coli* (ETEC, LT+) blotted with MAb (ec-01)

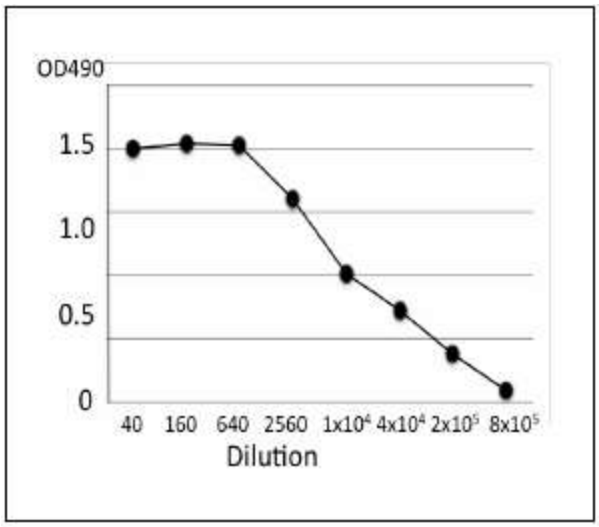

Fig.2. Titration of antibody reactivity of MAb (ec-01) by indirect ELISA using extract of ETEC *cells.*

The wells of plate were coated with crude extract of *E. coli* (100 µl, 1 µg/ml). After blocking with 5% skim milk, 100 µl of antibody at the indicated dilutions was added to the each well. HRP-conjugated goat anti-mouse IgG (100 µl, x 2000 dilution) was added. Color was developed with orthophenylenediamine as substrate. Optical densities (OD) measured at 490nm.

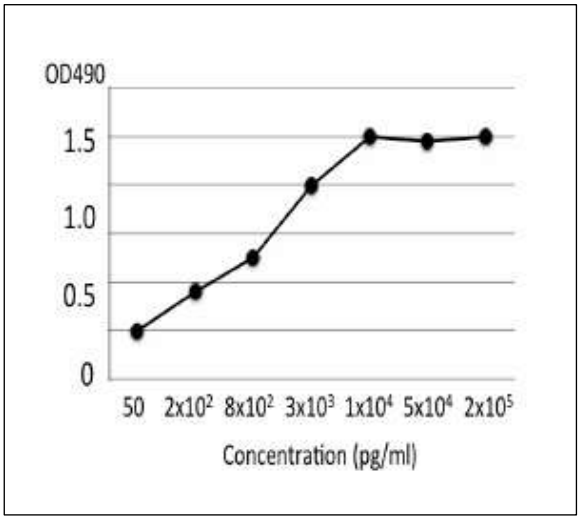

Fig.3. Titration of LT toxin in the extract of ETEC cells by indirect ELISA using MAb (ec-01).

ELISA plate is coated with indicated amounts of the extract of *E. coli cells* per well. MAb (ec-01) was used at 1/500 dilution. ELISA was performed as in Fig. 2.

Table 1. Reactivity of MAb (ec-01) with various food poisoning bacteria

	ELISA	WB
Escherichia coli (ETEC)	+	Subunit A
Other 5 isolated ETEC	+	Subunit A
E.coli O157:H7 (EHEC)	—	—
Salmonella Enteritidis	—	—
Staphylococcus aureus	—	—
Bacillus cereud	—	—
Clostridium perfringens	—	—

MAb (ec-1) reacted with 5 isolated strains of ETEC. Antibody did not react any other food poisoning bacteria such as verotoxin producing, *E. coli* (EHEC) or other enterotoxin producing bacteria.

Reference: There has been no publication using this antibody.

Related Product: 64-020 **anti-LT (E.coli)antibody, rabbit serum**