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Clostridium difficile Toxin B Rabbit pAb

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Catalog # AP54330

Product Information

Application	IHC-P, IHC-F, IF
Primary Accession	P18177
Predicted	Clostridium difficile
Host	Rabbit
Clonality	Polyclonal
Calculated MW	269712
Physical State	Liquid
Immunogen	KLH conjugated synthetic peptide derived from Clostridium difficile Toxin B
Epitope Specificity	301-400/2367
Isotype	IgG
Purity	affinity purified by Protein A
Buffer	0.01M TBS (pH7.4) with 1% BSA, 0.02% Proclin300 and 50% Glycerol.
SUBCELLULAR LOCATION	Secreted.
Important Note	This product as supplied is intended for research use only, not for use in human, therapeutic or diagnostic applications.
Background Descriptions	Clostridium difficile Toxin B (tcdB or ToxB) is a glucosyltranferase which is known to innactivate Rho, Cdc42 and Rac within target cells. This toxin is encoded on a pathogenicity region of the C. difficile chromossome and is expressed during the log and stationary phases of growth in response to a variety of environmental stimuli.

Additional Information

Other Names	Toxin B, 3.4.22.-, Glucosyltransferase TcdB, 2.4.1.-, tcdB {ECO:0000303|PubMed:24958798}
Dilution	IHC-P=1:100-500,IHC-F=1:100-500,ICC/IF=1:100-500,IF=1:100-500,ELISA=1:5000-10000
Storage	Store at -20 °C for one year. Avoid repeated freeze/thaw cycles. When reconstituted in sterile pH 7.4 0.01M PBS or diluent of antibody the antibody is stable for at least two weeks at 2-4 °C.

Protein Information

Name	tcdB {ECO:0000303|PubMed:24958798}
Function	[Toxin B]: Precursor of a cytotoxin that targets and disrupts the colonic epithelium, inducing the host inflammatory and innate immune responses

	and resulting in diarrhea and pseudomembranous colitis (PubMed:20844489, PubMed:24919149). TcdB constitutes the main toxin that mediates the pathology of C.difficile infection, an opportunistic pathogen that colonizes the colon when the normal gut microbiome is disrupted (PubMed:19252482, PubMed:20844489). Compared to TcdA, TcdB is more virulent and more important for inducing the host inflammatory and innate immune responses (PubMed:19252482, PubMed:24919149). This form constitutes the precursor of the toxin: it enters into host cells and mediates autoprocessing to release the active toxin (Glucosyltransferase TcdB) into the host cytosol (PubMed:10768933, PubMed:11152463, PubMed:12941936, PubMed:17334356, PubMed:20498856). Targets colonic epithelia by binding to the frizzled receptors FZD1, FZD2 and FZD7, and enters host cells via clathrin-mediated endocytosis (PubMed:27680706). Frizzled receptors constitute the major host receptors in the colonic epithelium, but other receptors, such as CSPG4 or NECTIN3/PVRL3, have been identified (PubMed:25547119, PubMed:26038560, PubMed:27680706). Binding to carbohydrates and sulfated glycosaminoglycans on host cell surface also contribute to entry into cells (By similarity). Once entered into host cells, acidification in the endosome promotes the membrane insertion of the translocation region and formation of a pore, leading to translocation of the GT44 and peptidase C80 domains across the endosomal membrane (PubMed:11152463, PubMed:12941936, PubMed:24567384). This activates the peptidase C80 domain and autocatalytic processing, releasing the N-terminal part (Glucosyltransferase TcdB), which constitutes the active part of the toxin, in the cytosol (PubMed:17334356, PubMed:27571750).
Cellular Location	[Toxin B]: Secreted. Host endosome membrane Note=Secreted from C.difficile cell into the extracellular environment via help of holin-like protein TcdE/UtxA (PubMed:22685398). Binds to the cell surface receptors via the receptor-binding region and enters the cells via clathrin-mediated endocytosis (PubMed:20498856) Acidification in the endosome triggers conformational changes that promote the membrane insertion of the translocation region, allowing formation of a pore, leading to translocation of the GT44 and peptidase C80 domains across the endosomal membrane (PubMed:10768933, PubMed:11152463, PubMed:12941936). 1D-myo-inositol hexakisphosphate-binding (InsP6) activates the peptidase C80 domain and autoprocessing, generating the Glucosyltransferase TcdB form, which is released in the host cytosol (PubMed:17334356).

Background

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Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.