Active Recombinant C. difficile tcdB Protein, His-tagged

Cat. No. tcdB-02C **Lot. No.** (See product label)

SPECIFICATION

Product Overview	Recombinant C. difficile Toxin B/TcdB Protein (Met1-Leu543) with a C-terminal 6-His tag was expressed in E. coli.
Species	C.difficile
Source	E.coli
ProteinLength	1-543
Description	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. 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. Compared to TcdA, TcdB is more virulent and more important for inducing the host inflammatory and innate immune responses. 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. Targets colonic epithelia by binding to the frizzled receptors FZD1, FZD2 and FZD7, and enters host cells via clathrin-mediated endocytosis. Frizzled receptors constitute the major host receptors in the colonic epithelium, but other receptors, such as CSPG4 or NECTIN3/PVRL3, have been identified. Binding to carbohydrates and sulfated glycosaminoglycans on host cells suface also contribute to entry into cells. Once entered into host cells, acidification in the endosome promotes the membrane insertion of the translocation region and

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	formation of a pore, leading to translocation of the GT44 and peptidase C80 domains across the endosomal membrane. 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.
Predicted N Terminal	Ser2
Bio-activity	Measured by its ability to hydrolyze UDP-Glucose. The specific activity is > 45 pmol/min/μg, as measured under the described conditions.
Molecular Mass	64 kDa
Endotoxin	< 1.0 EU/μg of the protein by the LAL method.
Purity	> 95%, by SDS-PAGE under reducing conditions and visualized by Colloidal Coomassie® Blue stain at 5 μg per lane.
Storage	Use a manual defrost freezer and avoid repeated freeze-thaw cycles. 6 months from date of receipt, -20 to -70 centigrade as supplied. 3 months, -20 to -70 centigrade under sterile conditions after opening.
Storage Buffer	Supplied as a 0.2 μm filtered solution in Tris and NaCl.
Shipping	The product is shipped with polar packs.

GENE INFORMATION

Gene Name	tcdB glycosylating toxin TcdB [Clostridioides difficile 630]
Official Symbol	tcdB

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Synonyms	tcdB; glycosylating toxin TcdB; toxB; glycosylating toxin TcdB
Gene ID	4914074
UniProt ID	P18177

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