



LD Biopharma, Inc.
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- PRODUCT DATA SHEET -

Name of Product: Recombinant sfGFP-CtxB Fusion Protein
Catalog Number: BRP-4271
Manufacturer: LD Biopharma, Inc. USA

Introduction

The pentameric ring of the B subunit of cholera enterotoxin (CtxB) guides the A subunit to its target by binding to monosialotetrahexosylganglioside (GM1) gangliosides on the surface of intestinal epithelial cells. Each CtxB pentamer can bind up to five GM1 molecules but exhibits no intrinsic toxic activity. Recent findings indicate that human extracellular vesicles (EVs), which are enriched with GM1 gangliosides on their surface, can be selectively captured from unconcentrated body fluids using microplate wells coated with CtxB. This approach also facilitates the use of sfGFP-CtxB fusion protein as a detecting reagent for tracing EVs in various biological samples.

Full-length mature form of cholera enterotoxin subunit B cDNA (104aa) was constructed with codon optimization gene synthesis and expressed with a SuperGFP Protein N-terminal (sfGFP; 257aa) fusion at target protein N-terminal in *E.coli* as soluble protein. The final product was affinity - column purified.

Gene Symbol: CtxB (LDCHTB)
Accession Number: NP_231009
Species: Cholera
Size: 50 µg / Vial
Composition: 1.0 mg/ml, sterile filtered, in 20% Glycerol + PBS buffer.
Storage: In Liquid. Keep at -80°C for long term storage. Product is stable at 4 °C for at least three weeks.

Key References



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A T Aman et al., *A mutant cholera toxin B subunit that binds GM1-ganglioside but lacks immunomodulatory or toxic activity*. PNAS Jul 10;98(15):8536-8541 (2001)

William A Walker, et al., *Cellular Endocytosis and Trafficking of Cholera Toxin B-Modified Mesoporous Silica Nanoparticles*. J Mater Chem B. Jan 7;4(7):1254-1262 (2016)

Applications

1. May be used as capture reagents for human EV studying either for plate/well based assay or magnetic beads based assay.
2. May be used as tracking reagent for endocytosis study, such as Mesoporous Silica Nanoparticle coated beads assay

Quality Control

Purity: > 91% by SDS-PAGE.

sfGFP protein: **Ex λ** = 485nm, and **Em λ** = 510nm.

Recombinant sfGFP- CtxB Fusion Protein Sequence (41.6 kD)

MKHHHHHHQVSKGEELFTGVVPIIIVELDGDVNGHKFSVRGEGEGDATNGKLTILKFICTTGKLPVPWPTLV
TTLTYGVQCFSRYPDHMKRHDFFKSAMPEGYVQERTISFKDDGTYKTRAEVKFEKDTLVNRIELKGIDFK
EDGNILGHKLEYNFNHNHYITADKQKNGIKANFKIRHNVEDGQVQLADHYQQNTPIGDGPVLLPDNHYL
STQSVLSKDPNEKRDMVLLLEFVTAAGITHGMDELYKSGLRSGGSGGENLYFQSEFTPQNIITDLCAEYH
NTQIYTLNDKIFSYTESLAGKREMAIITFKNGAIFQVEVPGSQHIDSQKKAIERMKDTLRIAYLLEAKVE
KLCVWNNKTPHAIAAISMAN