

Betacellulin

Human, Recombinant (rHuBTC)

Expressed in *E. coli*

Cat. No. CRP0875

Lot. No. (See product label)

PRODUCT INFORMATION

Description: Betacellulin (BTC) is a new member of the EGF family of cytokines that is comprised of at least ten proteins including EGF, TGF- α , amphiregulin, HB-EGF, and the various heregulins. All of these cytokines are synthesized as transmembrane precursors and are characterized by the presence of one or more EGF structural units in their extracellular domain. The soluble forms of these cytokines are released by proteolytic cleavage. BTC, a heparin-binding protein, was originally isolated from the conditioned media of mouse pancreatic beta tumor cells as a 32 kDa glycoprotein composed of 80 amino acid residues. Human and mouse cDNAs encode BTC precursor proteins of 178 and 177 amino acid residues, respectively.

Amino-Acid Sequence: 80 aa, non-glycosylated

M. W. : 9,000Da

Recombinant: Expressed in *E. coli*

Purity: >97% by SDS-PAGE and HPLC analyses.

Formulation: Lyophilized from a 0.2mm filtered solution (1.0mg/ml) in 20mM PBS, pH 7.4.

Biological Activity: Fully biologically active when compared to standard. The ED50 was determined by the dose-dependent stimulation of the proliferation of murine Balb/3T3 cells is < 0.05 ng/ml, corresponding to a Specific Activity of >2.0 \times 10⁷ IU/mg.

Endotoxin: Less than 1EU/mg of rHuBTC as determined by LAL method.

Reconstitution: We recommend that this vial be briefly centrifuged prior to opening to bring the contents to the bottom. Reconstitute in sterile distilled water or aqueous buffer containing 0.1% BSA to a concentration of 0.1-1.0 mg/mL. Stock solutions should be apportioned into working aliquots and stored at \leq -20°C. Further dilutions should be made in appropriate buffered solutions.

Storage: This lyophilized preparation is stable at 2-8°C, but should be kept at -20°C for long term storage, preferably desiccated. Upon reconstitution, the preparation is stable for up to one week at 2-8°C. For maximal stability, apportion the reconstituted preparation into working aliquots and store at -20°C to -70°C. Avoid repeated freeze/thaw cycles.

GENE INFORMATION

Gene Name: [BTC](#)

Synonyms: OTTHUMP00000160600; Probetacellulin ; Probetacellulin precursor

mRNA Refseq: [NM_001729](#)

MIM: [600345](#)

GeneID: [685](#)

Uniprot ID: [P35070](#)

Chromosome Location: 4q13-q21

Summary: The protein encoded by this gene is a member of the EGF family of growth factors. It is synthesized primarily as a transmembrane precursor, which is then processed to mature molecule by proteolytic events. This protein is a ligand for the EGF receptor.

Pathway: ErbB signaling pathway

Function: epidermal growth factor receptor binding, growth factor activity.

REFERENCES

1. Nagaoka T, Fukuda Y, et al. A betacellulin mutant promotes differentiation of pancreatic acinar AR42J cells into insulin-producing cells with low affinity of binding to ErbB1. *J Mol Biol.* 2008; 380(1):83-94.
2. Silver K, Tolea M, et al. The exon 1 Cys7Gly polymorphism within the betacellulin gene is associated with type 2 diabetes in African Americans. *Diabetes.* 2005; 54(4):1179-1184.
3. Revillion F, Lhotellier V, et al. ErbB/HER ligands in human breast cancer, and relationships with their receptors, the bio-pathological features and prognosis. *Ann Oncol.* 2008; 19(1): 73-80.

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