

# Cytokines

## Human Recombinant Betacellulin

### Betacellulin



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Catalog # 78105  
78105.1

10 µg  
50 µg

## Product Description

Betacellulin is a member of the epidermal growth factor (EGF) family, and signals through EGF receptor and ERBB4. It activates ERK and AKT pathways, which induces neural stem cell proliferation and prevents spontaneous differentiation in culture. Betacellulin stimulates the expansion of neural stem cells, transit-amplifying cells, and neuroblasts derived from subventricular zone and dentate gyrus (Gómez-Gaviro et al.). It is a potent mitogen for retinal pigment epithelial cells and vascular smooth muscle cells. Betacellulin down-regulates E-cadherin expression in ovarian cancer cell lines via MEK/ERK1/2 and PI3K/AKT signaling pathways, thus increasing cell migration (Zhao et al.). It is a modulator of interferon (IFN) response and enhances anti-viral effects of IFN (Al-Yahya et al.). Betacellulin is expressed in pancreatic  $\alpha$  cells,  $\beta$  cells, and duct cells. It induces the proliferation of pancreatic cancer cell lines, inhibits apoptosis, promotes the neogenesis of  $\beta$  cells, and converts non- $\beta$  cells into insulin-producing cells (Miyagawa et al.; Kawaguchi et al.; Saito et al.).

## Product Information

**Alternative Names:** BTC  
**Accession Number:** P35070  
**Amino Acid Sequence:** MDGNSTRSPE TNGLLCGDPE ENCAATTTQS KRKGHFSCRK KQYKHYCIKG RCRFVVAEQT PSCVCDEGYI GARCERVDLF Y  
**Predicted Molecular Mass:** 9.1 kDa  
**Species:** Human  
**Cross Reactivity:** Mouse  
**Formulation:** Lyophilized after dialysis against phosphate-buffered saline.  
**Source:** E. coli

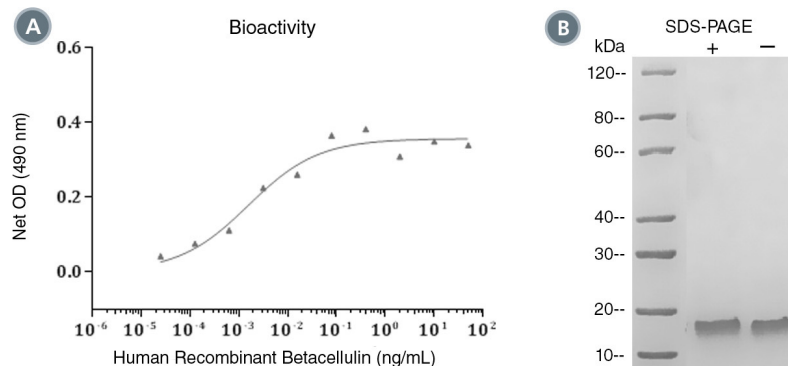
## Specifications

**Activity:** The specific activity is  $\geq 1.0 \times 10^8$  units/mg ( $EC_{50} \leq 0.01$  ng/mL) as determined by the dose-dependent stimulation of proliferation of BALB/c 3T3 cells.  
**Purity:**  $\geq 95\%$   
**Endotoxin Level:** Measured by kinetic Limulus amoebocyte lysate (LAL) analysis and is  $\leq 0.2$  EU/µg protein.

## Preparation and Storage

**Storage:** Store at  $-80^\circ\text{C}$ .  
**Stability:** Stable as supplied for 12 months from date of receipt.  
**Preparation:** Centrifuge vial before opening. Resuspend the product in sterile water or phosphate-buffered saline containing 0.1% bovine serum albumin (BSA) to at least 0.1 mg/mL by pipetting the solution down the sides of the vial. Do not vortex. Store at  $2 - 8^\circ\text{C}$  for up to 1 week or at  $-20^\circ\text{C}$  to  $-80^\circ\text{C}$  for up to 3 months. Avoid repeated freeze-thaw cycles.  
NOTE: If reconstituted product will be used immediately BSA is not required.

## Data



(A) The biological activity of Human Recombinant Betacellulin was tested by its ability to promote the proliferation of BALB/c 3T3 cells. Cell proliferation was measured using a fluorometric assay method. The EC<sub>50</sub> is defined as the effective concentration of the growth factor at which cell proliferation is at 50% of maximum. The EC<sub>50</sub> in the above example is less than 0.01 ng/mL.

(B) 2 µg of Human Recombinant Betacellulin was resolved with SDS-PAGE under reducing (+) and non-reducing (-) conditions and visualized by Coomassie Blue staining.

## Related Products

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## References

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