Cytokines

Mouse Recombinant Betacellulin

Betacellulin

Catalog #	78106	10 µg
	78106.1	50 µg

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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 α cells, β cells, and duct cells. It induces the proliferation of pancreatic cancer cell lines, inhibits apoptosis, promotes the neogenesis of β cells, and converts non-β cells into insulin-producing cells (Miyagawa al.; Kawaguchi et al.; Saito et al.).

Product Information

Alternative Names:	BTC
Accession Number:	Q05928
Amino Acid Sequence:	MDGNTTRTPE TNGSLCGAPG ENCTGTTPRQ KVKTHFSRCP KQYKHYCIHG RCRFVVDEQT PSCICEKGYF GARCERVDLF Y
Predicted Molecular Mass:	9.2 kDa
Species:	Mouse
Cross Reactivity:	Not determined
Formulation:	Lyophilized after dialysis against Tris buffer containing sodium chloride, pH 9.0.
Source:	E. coli

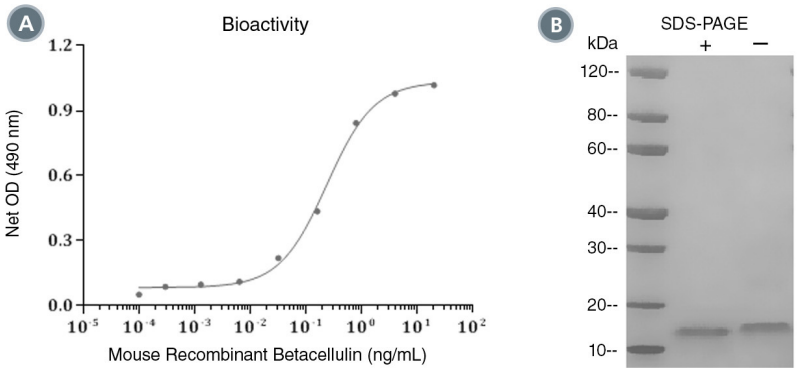
Specifications

Activity:	The specific activity is ≥ 2.0 x 10^6 units/mg (EC50 ≤ 0.5 ng/mL) as determined by a cell proliferation assay of BALB/c 3T3 cells.
Purity:	≥ 95%
Endotoxin Level:	Measured by kinetic Limulus amebocyte lysate (LAL) analysis and is ≤ 0.2 EU/µg protein.

Preparation and Storage

Storage:	Store at -80°C.
Stability:	Stable as supplied for 12 months from date of receipt.
Preparation:	Centrifuge vial before opening. Resuspend the product in sterile water to at least 0.1 mg/mL by pipetting the solution down the sides of the vial. Do not vortex. Store at 2 - 8°C for up to 2 weeks or at -20°C to -80°C for up to 3 months. Avoid repeated freeze-thaw cycles.

Data



(A) The biological activity of Mouse 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 EC50 is defined as the effective concentration of the growth factor at which cell proliferation is at 50% of maximum. The EC50 in the above example is less than 0.5 ng/mL.
(B) 2 µg of Mouse Recombinant Betacellulin was resolved with SDS-PAGE under reducing (+) and non-reducing (-) conditions and visualized by Coomassie Blue staining.

Related Products

For a complete list of cytokines, as well as related products available from STEMCELL Technologies, please visit our website at www.stemcell.com/cytokines or contact us at techsupport@stemcell.com.

References

Al-Yahya S et al. (2015) Human cytokinome analysis for interferon response. J Virol 89(14): 7108–19.
Gómez-Gaviro MV et al. (2012) Betacellulin promotes cell proliferation in the neural stem cell niche and stimulates neurogenesis. Proc Natl Acad Sci USA 109(4): 1317–22.
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Miyagawa J-I et al. (1999) Immunohistochemical localization of betacellulin, a new member of the EGF family, in normal human pancreas and islet tumor cells. Endocr J 46(6): 755–64.
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Zhao J et al. (2016) Betacellulin induces slug-mediated down-regulation of E-cadherin and cell migration in ovarian cancer cells. Oncotarget 7(20): 28881–90.