

Cytokines

Mouse Recombinant Betacellulin

Betacellulin

Catalog # 78106
78106.1

10 µg
50 µg



Scientists Helping Scientists™ | WWW.STEMCELL.COM

TOLL FREE PHONE 1 800 667 0322 • PHONE +1 604 877 0713

INFO@STEMCELL.COM • TECHSUPPORT@STEMCELL.COM

FOR GLOBAL CONTACT DETAILS VISIT OUR WEBSITE

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-Gavero 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 et al.; Kawaguchi et al.; Saito et al.).

Product Information

Alternative Names: BTC
Accession Number: Q05928
Amino Acid Sequence: MDGNTRTRTPE 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

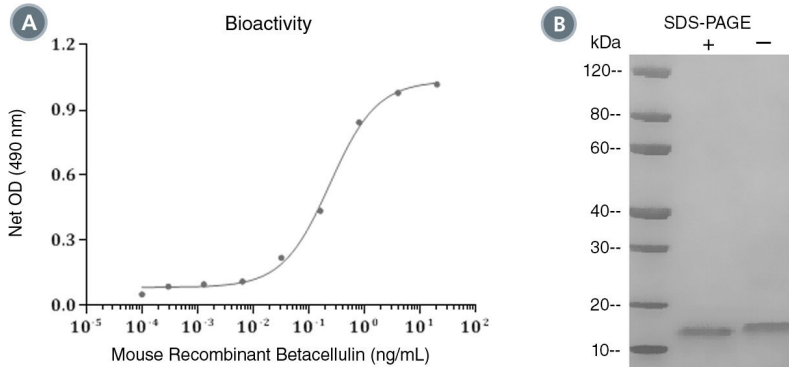
Specifications

Activity: The specific activity is $\geq 2.0 \times 10^6$ units/mg ($EC_{50} \leq 0.5$ ng/mL) as determined by a cell proliferation assay using BALB/c 3T3 cells.
Purity: $\geq 95\%$
Endotoxin Level: Measured by kinetic Limulus amoebocyte 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. Reconstitute 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. As a general guide, do not store at $2 - 8^\circ\text{C}$ for more than 2 weeks or at -20°C for more than 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. Mouse Recombinant Betacellulin has a predicted molecular mass of 9.2 kDa.

Related Products

For a complete list of cytokines, as well as related products available from STEMCELL Technologies, visit 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.
- Kawaguchi M et al. (2000) Auto-induction and growth stimulatory effect of betacellulin in human pancreatic cancer cells. *Int J Oncol* 16(1): 37–41.
- 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.
- Saito T et al. (2004) Differential activation of epidermal growth factor (EGF) receptor downstream signaling pathways by betacellulin and EGF. *Endocrinology* 145(9): 4232–43.
- 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.

STEMCELL TECHNOLOGIES INC.'S QUALITY MANAGEMENT SYSTEM IS CERTIFIED TO ISO 13485. PRODUCTS ARE FOR RESEARCH USE ONLY AND NOT INTENDED FOR HUMAN OR ANIMAL DIAGNOSTIC OR THERAPEUTIC USES UNLESS OTHERWISE STATED.

Copyright © 2018 by STEMCELL Technologies Inc. All rights reserved including graphics and images. STEMCELL Technologies & Design, STEMCELL Shield Design, and Scientists Helping Scientists are trademarks of STEMCELL Technologies Canada Inc. All other trademarks are the property of their respective holders. While STEMCELL has made all reasonable efforts to ensure that the information provided by STEMCELL and its suppliers is correct, it makes no warranties or representations as to the accuracy or completeness of such information.