Technical Data Sheet

Recombinant human betacellulin

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Lot Specific Information

Lot Number: **Lot Specific***

Total Protein: **Lot Specific***

*This information will be noted on the certificate of analysis that ships with this product.

Shelf Life

This product has a guaranteed shelf-life of one year from the date of customer receipt when stored as recommended.

Product Information

Catalog Number:	**RP104**
Protein Identity:	Confirmed identity with expected mass, determined by mass spectrometry
Reported Applications:	Cellular proliferation, migration and survival Stimulation of angiogenesis and vascular network development Neurogenesis and neural differentiation Differentiation of retinal progenitor cells
Formulation:	Lyophilized, white powder
Endotoxin:	≤0.6 EU/mg, LAL assay
Purity:	≥95%; SDS-PAGE
Reconstitution:	Resuspend in 10 mM HCl (Reconstitution Buffer A) at >50 µg/ml. Once reconstituted, store in single-use aliquots to avoid freeze-thaw cycles. Store reconstituted protein at -20 °C to -80 °C for a maximum of 12 months or until the expiry date if sooner.
Sterility:	Sterile
Production:	Microbial. Expressed in E. coli
Molecular Weight:	9.89 kDa
Bioactivity Assay:	No significant difference between EC50 of reference and test lots
Mycoplasma:	Negative

Description

Recombinant human betacellulin (BTC) is a member of the epidermal growth factor (EGF) family, originally identified as a proliferation factor in conditioned media from a mouse pancreatic tumor cell line, encoded as a 178-amino-acid membrane-anchored precursor that is cleaved to an 80-amino-acid mature form. Betacellulin binds the EGF receptor (EGFR) and other ERBB receptors, activating intracellular pathways including p38 MAPK, PI3K/AKT and JNK. As a pancreatic growth factor, it stimulates neogenesis and proliferation of pancreatic β-cells and pancreatic tumor cell lines and can convert selected non-β-cells, including mesenchymal stem cells (MSCs), into insulin-producing cells. Betacellulin may also contribute to angiogenesis, being detected in models of retinal neovascularization and inducing retinal vascular permeability and edema. It plays a regenerative role in the neural stem cell niche, stimulating proliferation and neurogenesis, and promotes proliferation and differentiation of retinal progenitor cells into retinal neurons, while in MSCs and pre-osteoblasts it may increase proliferation but decrease osteogenic markers, making betacellulin a valuable reagent for pancreatic, neural and retinal stem cell research. This protein is optimized for in vivo and functional applications: low-endotoxin, tag-free, and carrier-free, supporting reproducible performance in demanding preclinical and bioactivity studies. A GMP-grade version of this protein is available for cell and gene therapy manufacturing. Contact us at customerservice@bioxcell.com for details. Species reactivity: human. Species similarity: mouse - 78%, rat - 75%, bovine - 90%, porcine - 86%.

Storage

Store at the stock concentration at 4°C . **Do not freeze.**
It is not uncommon for a floccule or precipitate to appear during storage. The floccule is typically buffer salts precipitating out

of solution or a small bit of protein aggregation. For information on how to remove floccules or precipitates see our FAQ's at https://bioxcell.com/faqs.

Store lyophilized protein between -20 °C and -80 °C until the date of expiry. Avoid freeze-thaw cycles

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