Technical Data Sheet

Recombinant rat/mouse BDNF protein

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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:	**RP048**
Protein Identity:	Confirmed identity with expected mass, determined by mass spectrometry
Reported Applications:	Differentiation of midbrain dopaminergic neurons Differentiation of iPSC derived neural progenitors to neurons Generation of iPSC-derived midbrain organoids
Formulation:	Lyophilized, white powder
Endotoxin:	≤0.5 EU/mg, LAL assay
Purity:	≥95%; SDS-PAGE
Reconstitution:	Resuspend in sterile-filtered water 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:	14 kDa
Bioactivity Assay:	No significant difference between EC50 of reference and test lots
Mycoplasma:	Negative

Description

Recombinant rat/mouse BDNF protein (brain-derived neurotrophic factor) is a member of the neurotrophin family, alongside NGF and NT-3/4/5, whose mature active form is a ~13 kDa, 119-amino-acid cysteine-knot-stabilized dimer that binds TrkB with high affinity to activate MAPK, PI3K and PLC-γ signaling, and p75NTR with lower affinity to activate NF-κB. Released by neurons, glia, immune cells and skeletal muscle, BDNF supports the survival, growth and differentiation of neural stem cells and neurons, stimulates neurogenesis and dendrite and axon growth, drives synaptic plasticity underlying learning and memory, and contributes to neural repair. Impaired BDNF signaling is linked to Alzheimer's and Parkinson's diseases, depression, anxiety and spinal cord injury. In culture, recombinant BDNF maintains neurons and differentiates iPSC-derived neural progenitors, combining with GDNF, FGF-8 and Shh for dopaminergic neurons, with GDNF, NT-3 or IGF-1 for glutamatergic and GABAergic neurons, and with IGF-1 and NGF for cholinergic neurons, and it is required with GDNF for cortical organoid maturation. Rat BDNF shares 100% homology with human BDNF, making it a key reagent for neuroscience and neural 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. Species reactivity: rat. Species similarity: mouse - 99%, human - 100%, bovine - 100%, porcine - 100%.

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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