

## GMP Recombinant Human BDNF (carrier-free)

<b>Catalog# / Size</b>	788916 / 100 µg
<b>Other Names</b>	Brain-derived neurotrophic factor, ANON2, BLUN2
<b>Description</b>	Brain-derived neurotrophic factor (BDNF) is the second member of the NGF family of neurotrophic factors (neurotrophins) that includes nerve growth factor (NGF), neurotrophin-3 (NT-3) and neurotrophin-4/5 (NT-4/5). BDNF shares approximately 55% amino acid identity with other family members. The amino acid sequence of mature BDNF is identical in all mammals examined. All neurotrophins are noncovalently linked homodimers and initially produced as proneurotrophins. These proneurotrophins have distinct biological activity different from their mature counterparts. Mature BDNF promotes the survival and differentiation of selected neuronal populations of the peripheral and central nervous systems during development. BDNF participates in axonal growth, pathfinding and in the modulation of dendritic growth and morphology. BDNF is also a major regulator of synaptic transmission and plasticity at adult synapses in many regions of the CNS. High levels of expression of BDNF have been detected in the hippocampus, cerebellum, fetal eye and placenta. BDNF binds with high affinity and specifically activates the TrkB tyrosine kinase receptor.

<b>Quality Statement</b>	BioLegend Cell-Vive™ GMP Recombinant proteins are manufactured and tested in accordance with USP Chapter 1043, Ancillary Materials for Cell, Gene and Tissue-Engineered Products and Ph. Eur. Chapter 5.2.12 in a dedicated GMP facility compliant with ISO 13485:2016. Specifications and processes include:
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- Low endotoxin level (<0.1 EU/µg)
- Purity (≥ 95% or higher)
- Bioburden testing
- Mycoplasma testing
- Batch-to-batch consistency
- Vendor qualification
- Raw material traceability and documentation
- Documented procedures and employee training
- Equipment maintenance and monitoring records
- Lot-specific certificates of analysis
- Quality audits per ISO 13485:2016
- QA review of released products

### Product Details

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<b>Source</b>	Human BDNF, amino acid His129-Arg247 (Accession # P23560), and Thr at N-terminal was expressed in CHO cells.
<b>Molecular Mass</b>	The 120 amino acid recombinant protein has a predicted molecular mass of approximately 13.6 kD. The DTT-reduced protein migrates at approximately 15 kD and the non-reduced protein migrate at approximately 14 kD by SDS-PAGE. The predicted N-terminal amino acid is Thr.
<b>Purity</b>	>95%, as determined by Coomassie stained SDS-PAGE.
<b>Formulation</b>	Protein was lyophilized from 0.22 µm filtered solution containing 0.1% TFA, 10% Acetonitrile containing no preservative.
<b>Endotoxin Level</b>	Less than 0.1 EU per µg of protein as determined by the LAL method.
<b>Concentration</b>	100 µg size is lyophilized
<b>Storage &amp; Handling</b>	Unopened vial can be stored between 2°C and 8°C for up to 2 weeks, at -20°C or colder until the expiration date. Reconstitute lyophilized protein in sterile 4 mM HCl. Before reconstitution, make sure sterile 4 mM HCl acid and product are at room temperature. Quickly spin the vial or gently tap down on the vial to make sure the lyophilized product is at the bottom of the vial before opening. Use aseptic techniques to add the required volume of reconstitution buffer (sterile 4 mM HCl) to the vial, to obtain the recommended stock concentration 250 µg/mL. Close the vial and leave at ambient temperature for 15-20 minutes. Then gently invert the vial several times or until all of the lyophilized product dissolves. Leave the vial at room temperature for another 15 minutes. If small particulates are still observed after 15 minutes, incubate at room temperature for an additional 30 minutes, and leave the vial at 2°C - 8°C overnight. Next day, invert the vial several times or gently pipette the solution up and down before use. If needed, transfer the

reconstituted stock solution to a sterile container for additional dilution to no less than 100 µg/mL. Small working aliquots in polypropylene tubes can be made after reconstitution and store the vials at -20°C or lower. Avoid freeze/ thaw cycles. Carrier protein such as 0.2 - 1% endotoxin-free BSA or HSA can be added when preparing the stock solution. Aliquots can be stored between 2°C and 8°C for up to two weeks or stored at -20°C or colder for up to 3 months.

**Activity** When GMP Recombinant Human BDNF is immobilized at 1 µg/mL, human TrkB-Fc Chimera (Cat. No. 785002) binds in a dose-dependent manner. The EC<sub>50</sub> range for this effect is 40 - 160 ng/mL.

**Application** [Bioassay](#)

**Application Notes** Our lyophilized proteins are validated in-house to maintain activity after shipping at ambient temperature and are backed by our [100% satisfaction guarantee](#). If you have any concerns, contact us at [tech@biolegend.com](mailto:tech@biolegend.com).

#### Application References

(PubMed link indicates BioLegend citation)

1. Kawata M, et al. 2022. PLoS One. 17:e0276694. [PubMed](#)

#### Disclaimer

BioLegend Cell-Vive™ GMP Recombinant proteins are for research use only. Suitable for *ex vivo* cell processing. Not for injection or diagnostic or therapeutic use. Not for resale. BioLegend will not be held responsible for patent infringement or other violations that may occur with the use of our products.

## Antigen Details

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**Structure** Non-covalently linked homodimer

**Ligand/Receptor** TrkB

**Bioactivity** Measured by its ability to bind TrkB-Fc in a dose-dependent manner

**Cell Sources** Ubiquitous with high levels in peripheral tissues including prostate, placenta, pancreas, heart, kidney, pituitary gland, lung and testis.

**Cell Targets** Sensory neurons, sympathetic neurons, midbrain dopaminergic neurons.

#### Antigen References

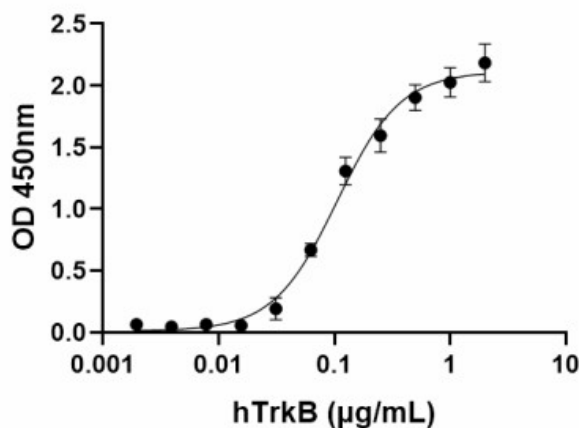
1. Baloh RH, et al. 1998. *Neuron*. 21:1291-302.
2. Masure S, et al. 1999. *Eur J Biochem*. 266:892-902.
3. Gardell LR, et al. 2003. *Nature Med*. 9:1383-9.
4. Honma Y, et al. 2002. *Neuron*. 35:267-82.
5. Banerjee A, et al. 2012. *PLoS One*. 7(11):e50098.
6. Wong LE, et al. 2015. *Proc Natl Acad Sci USA*. 112:6170-5.
7. Zhang M, et al. 2016. *Oncotarget*. 7:3267-82.

**Regulation** Supports the survival of sensory and sympathetic neurons, and also dopaminergic midbrain neurons.

**Gene ID** [627](#)

## Product Data

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