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<b>Products</b>	Human BDNF, research grade. Recombinant human brain-derived neurotrophic factor.										
	<table border="1"> <thead> <tr> <th>Content in µg</th><th>Order no.</th></tr> </thead> <tbody> <tr> <td>2</td><td>130-096-285</td></tr> <tr> <td>10</td><td>130-093-811</td></tr> <tr> <td>100</td><td>130-096-286</td></tr> <tr> <td>1000</td><td>130-103-435</td></tr> </tbody> </table>	Content in µg	Order no.	2	130-096-285	10	130-093-811	100	130-096-286	1000	130-103-435
Content in µg	Order no.										
2	130-096-285										
10	130-093-811										
100	130-096-286										
1000	130-103-435										
<b>Biological activity</b>	The ED <sub>50</sub> is ≤1000 ng/mL corresponding to an activity of ≥1×10 <sup>3</sup> U/mg.  ▲ <b>Note:</b> The ED <sub>50</sub> is determined by proliferation assay using rat C6 cells or by its ability to bind TrkB Fc Chimera in a functional ELISA.										
<b>Primary structure</b>	Two identical non-glycosylated polypeptide chains including N-terminal methionine (120 amino acid residues).										
<b>Molecular mass</b>	27.0 kDa (dimer).										
<b>Source</b>	Produced in <i>E. coli</i> .										
<b>Product format</b>	Lyophilized from a filtered (0.2 µm) buffer solution.										
<b>Stabilizer</b>	None.										
<b>Purity</b>	>97% as determined by SDS-PAGE analysis.										
<b>Endotoxin level</b>	Low endotoxin (<1.0 EU/µg cytokine) as determined by Limulus Amebocyte Lysate (LAL) assay.										
<b>Storage</b>	Lyophilized Human BDNF, research grade should be stored at -20 °C. The expiration date is indicated on the vial label. Upon reconstitution aliquots should be stored at -20 °C or below. Avoid repeated freeze-thaw cycles.										
<b>Reconstitution</b>	It is recommended to reconstitute lyophilized Human BDNF, research grade with deionized sterile-filtered water to a final concentration of 0.05–1.0 mg/mL in a minimal volume of 40 µL. Further dilutions should be prepared with 0.1% bovine serum albumin (BSA) or human serum albumin (HSA) in phosphate-buffered saline.										

### 1.1 Background information

Brain-derived neurotrophic factor (BDNF) is a member of the neurotrophin family. It shares high structural homology to nerve growth factor (NGF), neurotrophin 3 (NT-3) and neurotrophin 4 (NT-4), but they all operate via different high-affinity membrane receptors and differ in target specificity. BDNF has been shown to support the survival of existing neurons, the growth and differentiation of new neurons and synapses, as well as their function in the peripheral and the central nervous system. High expression levels of BDNF have been detected in the hippocampus, cerebellum, and cortex. Furthermore BDNF is expressed in the pituitary gland, spinal cord, heart, lung, and skeletal muscle. BDNF has been shown to bind with high affinity and specifically activate the cell surface TrkB tyrosine receptor kinase. The amino acid sequence of human and mouse BDNF is identical.

### 1.2 Applications

Human BDNF can be used for a variety of applications, including:

- Growth and differentiation of neurons and synapses.
- Survival and differentiation of neuronal cell culture.
- Trk signaling.
- Stimulation of axon outgrowth *in vitro*.

Optimal concentration for a specific application should be determined by a dose-response experiment.

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