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<b>Products</b>	Human GDNF, research grade. Recombinant human glial cell line-derived neurotrophic factor.						
	<table border="1"> <thead> <tr> <th>Content in µg</th> <th>Order no.</th> </tr> </thead> <tbody> <tr> <td>10</td> <td>130-129-547</td> </tr> <tr> <td>25</td> <td>130-129-548</td> </tr> </tbody> </table>	Content in µg	Order no.	10	130-129-547	25	130-129-548
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10	130-129-547						
25	130-129-548						
<b>Biological activity</b>	The ED <sub>50</sub> is ≤50 ng/mL corresponding to an activity of ≥2×10 <sup>4</sup> U/mg. <b>▲ Note:</b> The ED <sub>50</sub> is determined by proliferation assay using rat C6 cells. The proliferation assay was calibrated with the Non-WHO Reference Material for human GDNF (NIBSC code 09/266) provided by the WHO/National Institute for Biological Standards and Control.						
<b>Primary structure</b>	Homodimer, covalently linked non-glycosylated polypeptide chains (134 amino acid residues).						
<b>Molecular mass</b>	30.1 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>	Mannitol and trehalose.						
<b>Purity</b>	>95% 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 GDNF, 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 GDNF, research grade with deionized sterile-filtered water to a final concentration of 0.1–1.0 mg/mL in a minimal volume of 100 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

Glial cell line-derived neurotrophic factor (GDNF) is a disulfide-bonded homodimeric protein. GDNF and its related factors neurturin (NRTN), persephin (PSPN), and artemin (ARTN) are being referred to as GDNF family ligands (GFLs), which belong to the TGF-β superfamily. They activate intracellular signaling cascades through a multicomponent receptor system, composed of the receptor tyrosine kinase RET and one of the four GFRα (α1-α4) receptors. GDNF is expressed by a number of cell types including type 1 astrocytes, Schwann cells, neurons, pinealocytes, and skeletal muscle cells. GDNF has been shown to promote the survival of various neuronal subpopulations in the central nervous system, including midbrain dopaminergic neurons and motoneurons. Furthermore, it supports the survival and regulates the differentiation of many peripheral neurons, such as sympathetic, parasympathetic, sensory and enteric neurons. Outside the nervous system GDNF functions as a morphogen in kidney development and regulates spermatogonial differentiation.

### 1.2 Applications

Human GDNF may be used for a variety of applications, including:

- Growth and differentiation of neurons and synapses.
- Survival and differentiation factor in neuronal cell culture.
- Analysis of apoptosis and signaling pathways.

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

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