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GDNF

Catalog # PVGS1561

Product Information

Primary Accession	P39905
Species	Human
Sequence	Ser78-Ile211, expressed with an N-terminal Met
Purity	> 95% as analyzed by SDS-PAGE
Endotoxin Level	
Biological Activity	ED_{50}
Expression System	E. coli
Formulation	Lyophilized after extensive dialysis against PBS.
Reconstitution	It is recommended that this vial be briefly centrifuged prior to opening to bring the contents to the bottom. Reconstitute the lyophilized powder in ddH_2O or PBS up to 100 g/ml.
Storage & Stability	Upon receiving, this product remains stable for up to 6 months at lower than -70°C. Upon reconstitution, the product should be stable for up to 1 week at 4°C or up to 3 months at -20°C. For long term storage it is recommended that a carrier protein (example 0.1% BSA) be added. Avoid repeated freeze-thaw cycles.

Additional Information

Gene ID	2668
Other Names	Glial cell line-derived neurotrophic factor, hGDNF, Astrocyte-derived trophic factor, ATF, GDNF
Target Background	Glial cell line-derived neurotrophic factor (GDNF) is a neurotrophic factor belonging to the TGF-beta super family and is necessary for neuron survival and phenotypic maintenance in the central and peripheral nervous systems. G-DNF has the potential to support the differentiation and survival of many neuron subpopulations, especially dopaminergic neurons and motor neurons, as well as Purkinje cells and sympathetic neurons. Sertoli cells, type 1 astrocytes, Schwann cells, neurons, pinealocytes and skeletal muscle cells are known to express GDNF in human. GDNF has been shown to interact with GFRA2 and GDNF family receptor alpha 1. Mutations in this gene may be associated with Hirschsprung's disease, Parkinson's disease and amyotrophic lateral sclerosis (ALS).The recombinant human G-DNF expressed in E.coli is a disulfide-linked homo-dimer, with an apparent molecular weight of 17 kDa.

Protein Information

Name	GDNF
Function	Neurotrophic factor that enhances survival and morphological differentiation of dopaminergic neurons and increases their high- affinity dopamine uptake (PubMed:8493557). Acts by binding to its coreceptor, GFRA1, leading to autophosphorylation and activation of the RET receptor (PubMed:10829012, PubMed:25242331, PubMed:31535977). Involved in the development of the neural crest (PubMed:15242795).
Cellular Location	Secreted
Tissue Location	In the brain, predominantly expressed in the striatum with highest levels in the caudate and lowest in the putamen Isoform 2 is absent from most tissues except for low levels in intestine and kidney. Highest expression of isoform 3 is found in pancreatic islets. Isoform 5 is expressed at very low levels in putamen, nucleus accumbens, prefrontal cortex, amygdala, hypothalamus and intestine. Isoform 3 is up-regulated in the middle temporal gyrus of Alzheimer disease patients while isoform 2 shows no change