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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} E. coli **Expression System**

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

ddH₂O 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

Glial cell line-derived neurotrophic factor (GDNF) is a neurotrophic factor **Target Background**

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:<u>8493557</u>). Acts by binding to its coreceptor, GFRA1, leading to autophosphorylation and activation of the RET receptor (PubMed:<u>10829012</u>, PubMed:<u>25242331</u>, PubMed:<u>31535977</u>). 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

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