Datasheet for ABIN921058

GDNF ELISA Kit

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Overview

Quantity:	96 tests
Target:	GDNF
Binding Specificity:	AA 109-211
Reactivity:	Human
Method Type:	Sandwich ELISA
Detection Range:	31.2-2000 pg/mL
Minimum Detection Limit:	31.2 pg/mL
Application:	ELISA

Product Details

Purpose:	Sandwich High Sensitivity ELISA kit for Quantitative Detection of Human GDNF
Brand:	PicoKine™
Sample Type:	Cell Culture Supernatant, Serum, Plasma (heparin), Plasma (EDTA)
Analytical Method:	Quantitative
Detection Method:	Colorimetric
Immunogen:	Expression system for standard: NSO Immunogen sequence: R109-I211
Specificity:	Expression system for standard: NSO Immunogen sequence: R109-I211
Cross-Reactivity (Details):	There is no detectable cross-reactivity with other relevant proteins.

Product Details

Sensitivity:	<4pg/mL
Material not included:	Microplate reader in standard size. Automated plate washer. Adjustable pipettes and pipette tips. Multichannel pipettes are recommended in the condition of large amount of samples in the detection. Clean tubes and Eppendorf tubes. Washing buffer (neutral PBS or TBS). Preparation of 0.01M TBS: Add 1.2g Tris, 8.5g Nacl

Target Details

Target:	GDNF
Alternative Name:	GDNF (GDNF Products)
Background:	Protein Function: Neurotrophic factor that enhances survival and morphological differentiation of dopaminergic neurons and increases their high-affinity dopamine uptake. . Background: Glial cell line-derived neurotrophic factor(GDNF) is a glycosylated, disulfide-bonded homodimer that is a distantly related member of the transforming growth factor-beta superfamily. GDNF, is a potent neurotrophic factor that promotes the survival of dopaminergic neurones in cultures including embryonic neuronal cultures. GDNF, in addition to its potential role in the differentiation and survival of central nervous system neurons, has profound effects on kidney organogenesis and the development of the peripheral nervous system. GDNF may have utility in the treatment of Parkinson's disease, which is marked by progressive degeneration of midbrain dopaminergic neurons. GDNF lies on the short arm of human chromosome 5, at 5p13.1-p13.3 ability to promote dopamine uptake in midbrain cultures. Synonyms: Glial cell line-derived neurotrophic factor,hGDNF,Astrocyte-derived trophic factor,ATF,GDNF, Full Gene Name: Glial cell line-derived neurotrophic factor Cellular Localisation: Secreted.
Gene ID:	2668
UniProt:	P39905
Pathways:	RTK Signaling, Synaptic Membrane, Tube Formation, Autophagy, Smooth Muscle Cell Migration

Application Details

Application Notes:	Before using Kit, spin tubes and bring down all components to bottom of tube. Duplicate well assay was recommended for both standard and sample testing.
Comment:	Sequence similarities: Belongs to the TGF-beta family. GDNF subfamily.

Application Details

	Tissue Specificity: 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. .
Plate:	Pre-coated
Protocol:	human GDNF ELISA Kit was based on standard sandwich enzyme-linked immune-sorbent assay technology. A monoclonal antibody from mouse specific for GDNF has been precoated onto 96-well plates. Standards(NSO, R109-I211) and test samples are added to the wells, a biotinylated detection polyclonal antibody from goat specific for GDNF is added subsequently and then followed by washing with PBS or TBS buffer. Avidin-Biotin-Peroxidase Complex was added and unbound conjugates were washed away with PBS or TBS buffer. HRP substrate TMB was used to visualize HRP enzymatic reaction. TMB was catalyzed by HRP to produce a blue color product that changed into yellow after adding acidic stop solution. The density of yellow is proportional to the human GDNF amount of sample captured in plate.
Assay Procedure:	Aliquot 0.1 mL per well of the 2000pg/mL,1000pg/mL, 500pg/mL, 250pg/mL, 125pg/mL, 62.5pg/mL, 31.2pg/mL human GDNF standard solutions into the precoated 96-well plate. Add 0.1 mL of the sample diluent buffer into the control well (Zero well). Add 0.1 mL of each properly diluted sample of human cell culture supernates, serum or plasma(heparin, EDTA) to each empty well. See "Sample Dilution Guideline" above for details. It is recommended that each human GDNF standard solution and each sample be measured in duplicate.
Assay Precision:	• Sample 1: n=16, Mean(pg/ml): 157, Standard deviation: 6.44, CV(%): 4.1 • Sample 2: n=16, Mean(pg/ml): 634, Standard deviation: 36.14, CV(%): 5.7 • Sample 3: n=16, Mean(pg/ml): 1416, Standard deviation: 72.22, CV(%): 5.1, • Sample 1: n=24, Mean(pg/ml): 144, Standard deviation: 10.66, CV(%): 7.4 • Sample 2: n=24, Mean(pg/ml): 667, Standard deviation: 54.69, CV(%): 8.2 • Sample 3: n=24, Mean(pg/ml): 1424, Standard deviation: 106.8, CV(%): 7.5
Restrictions:	For Research Use only

Handling

Handling Advice:	Avoid multiple freeze-thaw cycles.
Storage:	-20 °C,4 °C

Handling

Storage Comment:	Store at 4°C for 6 months, at -20°C for 12 months. Avoid multiple freeze-thaw cycles
Expiry Date:	12 months

Publications

Product cited in:

Niu, Li, Wu, Wu, Yan, Shang, Bai, Li, Hua: "Melatonin promotes goat spermatogonia stem cells (SSCs) proliferation by stimulating glial cell line-derived neurotrophic factor (GDNF) production in Sertoli cells." in: **Oncotarget**, Vol. 7, Issue 47, pp. 77532-77542, (2018) (PubMed).

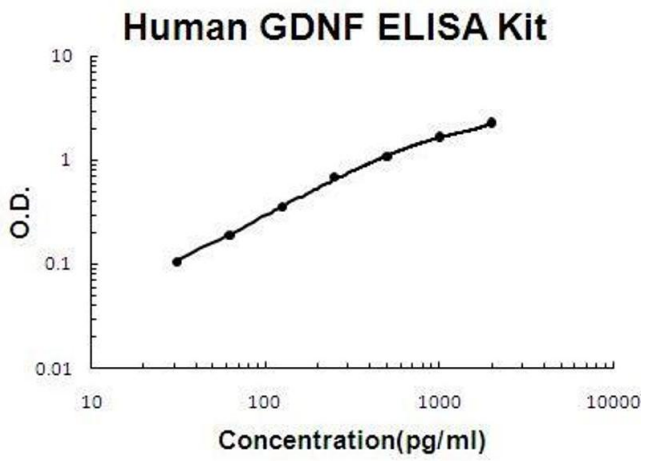
Guo, Sun, Xu, Zhao, Peng, Wang: "Human umbilical cord mesenchymal stem cells promote peripheral nerve repair via paracrine mechanisms." in: **Neural regeneration research**, Vol. 10, Issue 4, pp. 651-8, (2015) (PubMed).

Liu, Wang, Shao, Liu: "Genetically modified Schwann cells producing glial cell line-derived neurotrophic factor inhibit neuronal apoptosis in rat spinal cord injury." in: **Molecular medicine reports**, Vol. 9, Issue 4, pp. 1305-12, (2014) (PubMed).

Banerjee, Nürnberger, Hennerbichler, Riedl, Schuh, Hacobian, Teuschl, Eibl, Redl, Wolbank: "In toto differentiation of human amniotic membrane towards the Schwann cell lineage." in: **Cell and tissue banking**, Vol. 15, Issue 2, pp. 227-39, (2014) (PubMed).

Chai, Guo, Li, Wang, Wang, Shi, Hu, Liu, Adah: "Scutellarin and caffeic acid ester fraction, active components of Dengzhanxixin injection, upregulate neurotrophins synthesis and release in hypoxia/reoxygenation rat astrocytes." in: **Journal of ethnopharmacology**, Vol. 150, Issue 1, pp. 100-7, (2013) (PubMed).

There are more publications referencing this product on: Product page



ELISA

Image 1. Human GDNF PicoKine ELISA Kit standard curve