Cytokines

Human Recombinant GDNF, ACF

Glial cell line-derived neurotrophic factor

Catalog #	78139	10 µg
	78139.1	100 µg
	78139.2	1000 µg

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Product Description

Glial cell line-derived neurotrophic factor (GDNF) is a neurotrophic factor and a member of the tumor growth factor (TGF)-beta superfamily. The GDNF family of growth factors also includes neurturin, persephin, and artemin, which have seven conserved cysteine residues called cysteine-knot (Treanor et al.). GDNF-family ligands signal through binding to specific GDNF-family receptor-α (GFRα) co-receptors and activate the RET receptor tyrosine kinase (Durbec et al.). Four different forms of GFRα co-receptors have been characterized (GFRα 1-4) out of which GDNF binds specifically to GFRα1 prior to forming a complex with RET (Airaksinen & Saarma). GDNF is known to promote survival and morphological differentiation of midbrain dopaminergic neurons in both in vivo and in vitro studies and increases their high-affinity dopamine uptake (Granholm et al.; Lin et al.). GDNF has also been shown to have restorative effects on dying dopaminergic neurons in response to degenerative toxins (Aoi et al.). GDNF, together with Human Recombinant BDNF (brain-derived neurotrophic factor; Catalog #78005), BrainPhys™ Neuronal Medium (Catalog #05790), and other supplements, can be used to differentiate human pluripotent stem cell (hPSC)-derived neural progenitor cells into neurons (Bardy et al.). This product is animal component-free.

Product Information

Alternative Names:	Astrocyte-derived trophic factor, ATF, ATF1, ATF2, Glial cell-derived neurotrophic factor
Accession Number:	P39905
Amino Acid Sequence:	MSPDKQMAVL PRRERNRQAA AANPENSRGK GRRGQRGKNR GCVLTAIHLN VTDLGLGYET KEELIFRYCS GSCDAAETTY DKILKNLSRN RRLVSDKVGQ ACCRPIAFDD DLSFLDDNLV YHILRKHSAK RCGCI
Predicted Molecular Mass:	15.2 kDa monomer; 30.4 kDa dimer
Species:	Human
Cross Reactivity:	Rat
Formulation:	Lyophilized from a sterile-filtered aqueous solution containing sodium citrate and sodium chloride, pH 4.0
Source:	E. coli

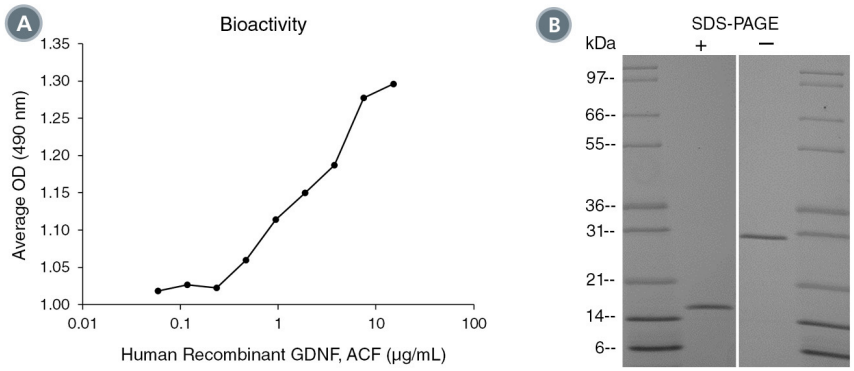
Specifications

Activity:	The specific activity is ≥ 3.3 x 10^2 units/mg (EC50 ≤ 3 µg/mL) as determined by a cell proliferation assay using C6 cells.
Purity:	≥ 95%
Endotoxin Level:	Measured by kinetic Limulus amebocyte lysate (LAL) analysis and is ≤ 1 EU/µg protein.

Preparation and Storage

Storage:	Store at -20°C to -80°C.
Stability:	Stable as supplied for 12 months from date of receipt.
Preparation:	Centrifuge vial before opening. Reconstitute the product in sterile water to at least 0.1 mg/mL by pipetting the solution down the sides of the vial. Do not vortex. OPTIONAL: After reconstitution, if product will not be used immediately, dilute with concentrated bovine serum albumin (BSA) to a final BSA concentration of 0.1%. The effect of storage of stock solution on product performance should be tested for each application. As a general guide, do not store at 2 - 8°C for more than 1 month or at -80°C for more than 3 months. Avoid repeated freeze-thaw cycles.

Data



(A) The biological activity of Human Recombinant GDNF, ACF was tested by its ability to promote the proliferation of C6 cells. Cell proliferation was measured using a fluorometric assay method. The EC50 is defined as the effective concentration of the growth factor at which cell proliferation is at 50% of maximum. The EC50 in the example above is 1.84 µg/mL.
(B) 1 µg of Human Recombinant GDNF, ACF was resolved with SDS-PAGE under reducing (+) and non-reducing (-) conditions and visualized by Coomassie Blue staining. Human Recombinant GDNF, ACF has a predicted molecular mass of 30.4 kDa (15.2 kDa per monomer).

Related Products

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References

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