Cytokines

Human Recombinant BDNF, ACF

Brain-derived neurotrophic factor, animal component-free

Catalog #	78133	10 µg
	78133.1	100 µg
	78133.2	1000 µg

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Product Description

Brain-derived neurotrophic factor (BDNF), like nerve growth factor (NGF), neurotrophin-3 (NT-3), and neurotrophin-4 (NT-4), is a member of the NGF family of neurotrophins, which are required for the differentiation and survival of specific neuronal subpopulations in both the central and the peripheral nervous systems (Minichiello & Klein; Minichiello et al.). BDNF binds with high affinity to the tropomyosin receptor kinase B (TrkB) and activates AKT and ERK pathways (Mattson et al.). It is expressed in the hippocampus, cortex, and synapses of the basal forebrain. BDNF acts as a survival factor for human embryonic stem cells when plated on either feeder cells or Corning® Matrigel® (Pyle et al.). BDNF regulates synaptic transmission and plasticity at adult synapses in the central nervous system and contributes to adaptive neuronal responses including long-term potentiation, long-term depression, certain forms of short-term synaptic plasticity, as well as homeostatic regulation of neuronal excitability (Reichardt). It also has a role in neurogenesis by promoting survival and growth of dorsal root ganglion cells, and hippocampal and cortical neurons (Binder & Scharfman). BDNF, together with glial cell line-derived neurotrophic factor (GDNF) and other supplements, is commonly used to differentiate human pluripotent stem cell (hPSC)-derived neural progenitor cells into neurons (Brafman). This product is animal component-free.

Product Information

Alternative Names:	Abrineurin, ANON2, BULN2, MGC34632, Neurotrophin
Accession Number:	P23560
Amino Acid Sequence:	MHSDPARRGE LSVCDSISEW VTAADKKTAV DMSGGTVTVL EKVPVSKGQL KQYFYETKCN PMGYTKEGCR GIDKRHWNSQ CRTTQSYVRA LTMDSKKRIG WRFIRIDTSC VCTLTIKRGR
Predicted Molecular Mass:	13.6 kDa monomer; 27.3 kDa dimer
Species:	Human
Cross Reactivity:	Mouse, Rat
Formulation:	Lyophilized from a sterile-filtered aqueous solution containing 0.1% trifluoroacetic acid
Source:	E. coli

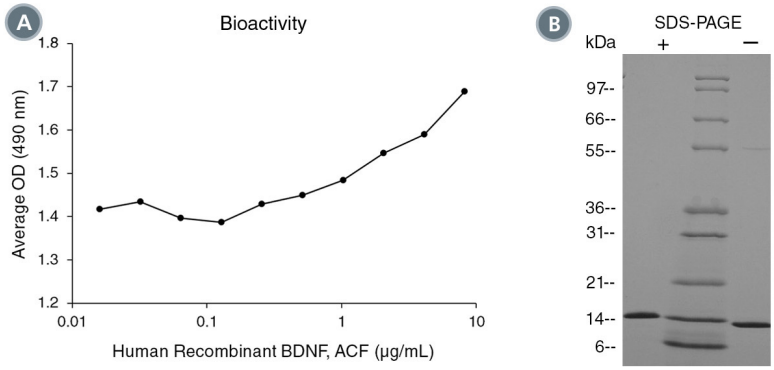
Specifications

Activity:	The specific activity is ≥ 5.0 x 10^2 units/mg (EC50 ≤ 2 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 BDNF, 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 1.69 µg/mL.
(B) 1 µg of Human Recombinant BDNF, ACF was resolved with SDS-PAGE under reducing (+) and non-reducing (-) conditions and visualized by Coomassie Blue staining. Human Recombinant BDNF, ACF has a predicted molecular mass of 27.3 kDa (13.6 kDa per monomer).

Related Products

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References

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