Recombinant Mouse CDNF

Catalog Number: 5187-CD

DESCRIPTION

Source	Mouse myeloma cell line, NS0-derived Leu27-Leu187, with a C-terminal 10-His tag Accession # Q8CC36
N-terminal Sequence Analysis	Leu27
Predicted Molecular Mass	19.8 kDa

SPECIFICATIONS

SDS-PAGE	20 kDa, reducing conditions
Activity	Measured by its ability to enhance neurite outgrowth of E16-E18 rat embryonic cortical neurons. Able to significantly enhance neurite outgrowth when immobilized at 6-25 µg/mL on a nitrocellulose-coated microplate.
Endotoxin Level	<0.10 EU per 1 µg of the protein by the LAL method.
Purity	>90%, by SDS-PAGE under reducing conditions and visualized by silver stain.
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 200 µg/mL in sterile PBS.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	**Use a manual defrost freezer and avoid repeated freeze-thaw cycles.** ● 12 months from date of receipt, -20 to -70 °C as supplied. ● 1 month, 2 to 8 °C under sterile conditions after reconstitution. ● 3 months, -20 to -70 °C under sterile conditions after reconstitution.

BACKGROUND

CDNF (conserved dopamine neurotrophic factor), also called Armetl1 (arginine-rich, mutated in early stage tumors-like 1), is a 17 - 19 kDa secreted protein that shares 52% amino acid (aa) identity with mouse MANF (mesencephalic-astrocyte-derived neurotrophic factor), also called Armet (1). The Armet designation is not preferred, because the proteins as translated are not actually arginine-rich (1). However, both CDNF and MANF have a high proportion of charged residues, a pattern of eight cysteines shown to form intramoleculular disulfide bonds, and a C-terminal endoplasmic reticulum retention signal (shown to function in MANF) (1 - 3). The mouse CDNF cDNA encodes a 187 aa protein with a 24 aa signal sequence and a 163 mature sequence (1). Mature mouse CDNF shares 80%, 87%, 83% and 82% aa identity with human, rat, equine and bovine CDNF, respectively. Although CDNF mRNA and protein are expressed in pre and postnatal mouse brain, they are mostly abundant in adult heart, skeletal muscle and testis. Transcripts within the postnatal mouse brain are concentrated in the hippocampus, thalamus, corpus callosum and optic nerve (1). Like MANF and GDNF, CDNF promotes survival of dopaminergic neurons in vitro (1, 4). In a rat Parkinson's disease model, CDNF also promotes rescue and restoration of dopaminergic neurons in vivo (1).

References:

1. Lindholm, P. *et al.* (2007) Nature **448**:73.
2. Mizobuchi, N. *et al.* (2007) Cell Struct. Funct. **32**:41.
3. Raykhel, I. *et al.* (2007) J. Cell Biol. **179**:1193.
4. Petrova, P. *et al.* (2003) J. Mol. Neurosci. **20**:173.

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