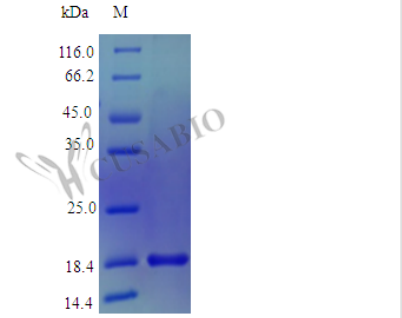
Recombinant Human Mesencephalic astrocyte-derived neurotrophic factor protein (MANF) (Active)

Product Code	CSB-AP002891HU
Abbreviation	Recombinant Human MANF protein (Active)
Uniprot No.	P55145
Form	Lyophilized powder
Storage Buffer	Lyophilized from a 0.2 μm filtered PBS, pH 7.4
Product Type	Other
Immunogen Species	Homo sapiens (Human)
Biological Activity	Fully biologically active when compared to standard. The ED50 as determined by a cell proliferation assay using rat C6 cells is less than 20 μg/ml, corresponding to a specific activity of >50 IU/mg.
Purity	>95% as determined by SDS-PAGE.
Sequence	LRPGDCEVCI SYLGRFYQDL KDRDVTFSPA TIENELIKFC REARGKENRL CYYIGATDDA ATKIINEVSK PLAHHIPVEK ICEKLKKKDS QICELKYDKQ IDLSTVDLKK LRVKELKKIL DDWGETCKGC AEKSDYIRKI NELMPKYAPK AASARTDL
Research Area	Neuroscience
Source	E.coli
Target Names	MANF
Expression Region	25-182aa
Notes	Repeated freezing and thawing is not recommended. Store working aliquots at 4°C for up to one week.
Tag Info	Tag-Free
Mol. Weight	18.2 kDa
Protein Length	Full Length of Mature Protein
PubMed ID	8649854; 15489334; 16641997; 12665801; 12794311; 15144186; 18561914; 21269460; 24275569; 19258449; 8971156; 9174057
Image	



Description

The production of recombinant human Mesencephalic astrocyte-derived neurotrophic factor protein (MANF) involves inserting the gene encoding the MANF protein (25-182aa) into a vector and transferring it into E.coli cells. The E.coli cells are grown in bioreactors, where they express the recombinant MANF protein. The MANF protein is purified from the cell lysate using chromatographic techniques, yielding a high-purity product that can be used in research. Its activity has been validated in a cell proliferation assay using rat C6 cells, with the ED50 less than 20 μg/ml, corresponding to a specific activity of >50 IU/mg. It contains less than 1.0 EU/μg endotoxin as determined by the LAL method. Its purity is over 95% as measured by SDS-PAGE.

MANF a member of the family of evolutionarily conserved neurotrophic factors, is known for its neuroprotective and neurorestorative properties [1][2]. It can be induced by endoplasmic reticulum (ER) stress [3]. It is localized in the ER and promotes cell survival [4]. MANF is expressed in immune cells and has an autocrine role in immune modulation, promoting anti-inflammatory activation in both flies and mice [5]. MANF represents a unique class of neurotrophic factors, distinct in structure and function from classical neurotrophic factors [6]. Recent research underscores the crucial role of MANF in maintaining ER homeostasis [7]. It reduces cell apoptosis by upregulating GRP78, promoting the survival of dopaminergic neurons [8]. Furthermore, MANF protects dopaminergic neurons and is involved in the ER unfolded protein response [9]. When injected into the brain, recombinant mammalian MANF has been shown to protect and repair dopaminergic neurons in toxin-induced rodent models of Parkinson's disease (PD) in vivo [10].

References:
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Endotoxin	Less than 1.0 EU/μg as determined by LAL method.
Reconstitution	We recommend that this vial be briefly centrifuged prior to opening to bring the contents to the bottom. Please reconstitute protein in deionized sterile water to a concentration of 0.1-1.0 mg/mL.We recommend to add 5-50% of glycerol (final concentration) and aliquot for long-term storage at -20°C/-80°C. Our default final concentration of glycerol is 50%. Customers could use it as reference.
Shelf Life	The shelf life is related to many factors, storage state, buffer ingredients, storage temperature and the stability of the protein itself. Generally, the shelf life of liquid form is 6 months at -20°C/-80°C. The shelf life of lyophilized form is 12 months at -20°C/-80°C.