

Recombinant Rat Mesencephalic Astrocyte-Derived Neurotrophic Factor (Rat MANF)

Product Information

| Product Name | Cat# | Size |
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| Recombinant Rat Mesencephalic Astrocyte-Derived Neurotrophic Factor (Rat MANF) | 92121ES08 | 5 µg |
| | 92121ES60 | 100 µg |
| | 92121ES76 | 500 µg |

Product Description

Mesencephalic astrocyte-derived neurotrophic factor (MANF), also known as arginine-rich, mutated in early stage tumors (ARMET) and arginine-rich protein (ARP), is a 20 kDa member of the ARMET family of proteins. The name ARMET comes from the fact that the protein was initially thought to be 50 aa longer at the N-terminus and to contain an arginine-rich region. The presence of a specific mutation changing the previously numbered codon 50 from ATG to AGG, or deletion of that codon, has been reported in a variety of solid tumors. Human MANF is synthesized as a 179 amino acid (aa) precursor that contains a 21 aa signal sequence and a 158 aa mature chain. Mature human MANF is 99%, 98% and 96% aa identical to mature rat, mouse and bovine MANF, respectively. MANF is localized to the endoplasmic reticulum (ER) and Golgi apparatus, and is also secreted. In the CNS, MANF selectively protects nigral dopaminergic neurons, versus GABAergic or serotonergic neurons, which suggests that MANF may be indicated for the treatment of Parkinson's disease. MANF is also one of the 12 commonly unfolded protein response (UPR)-up-regulated genes. One study showed that MANF plays an important role in protecting cells against tunicamycin and thapsigargin-induced cell death. Loss of MANF renders cells more susceptible to those drugs, but also increases cell proliferation and decreases cell size. Another study showed that MANF is an endoplasmic reticulum stress response (ERSR) gene in the heart that can be induced and secreted in response to ER stresses, including ischemia, and that extracellular MANF may protect cardiac myocytes in an autocrine and paracrine manner.

Product Properties

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| Synonyms | mutated in early stage tumors, ARMET, ARP, MANF, mesencephalic astrocyte-derived neurotrophic factor, Protein ARMET |
| Accession | P0C5H9 |
| GeneID | 315989 |
| Source | E.coli-derived rat MANF protein, Leu22-Leu179. |
| Molecular Weight | Approximately 18.2 kDa. |
| AA Sequence | LRPGDCEVCI SYLGRFYQDL KDRDVTFSPA TIEELIKFC REARGKENRL CYYIGATDDA ATKIINEVSK PLAHHIPVEK ICEKLVKKDS QICELKYDKQ IDLSTVDLKK LRVKELKKIL DDWGEMCKGC AEKSDYIRKI NELMPKYAPK AASARTDL |
| Tag | None |
| Physical Appearance | Sterile Filtered White lyophilized (freeze-dried) powder. |
| Purity | >98% by SDS-PAGE and HPLC analyses. |
| Biological Activity | Fully biologically active when compared to standard. The ED ₅₀ as determined by a cell proliferation assay using rat C6 cells is less than 10 µg/mL, corresponding to a specific activity of > 100 IU/mg. |
| Endotoxin | < 0.1 EU per 1µg of the protein by the LAL method. |
| Formulation | Lyophilized from a 0.2 µm filtered concentrated solution in PBS, pH 7.4. |

We recommend that this vial be briefly centrifuged prior to opening to bring the contents to the bottom.

Reconstitution

Reconstitute in sterile distilled water or aqueous buffer containing 0.1% BSA to a concentration of 0.1-1.0 mg/mL. Stock solutions should be apportioned into working aliquots and stored at $\leq -20^{\circ}\text{C}$. Further dilutions should be made in appropriate buffered solutions.

Shipping and Storage

The products are shipped with ice pack and can be stored at -20°C to -80°C for 1 year.

Recommend to aliquot the protein into smaller quantities when first used and avoid repeated freeze-thaw cycles.

Cautions

1. Avoid repeated freeze-thaw cycles.
2. For your safety and health, please wear lab coats and disposable gloves for operation.
3. For research use only!