### DESCRIPTION

| Source            | E. coli-derived  
| Ala108-Gly220  
| Accession # NP_476432 |
| N-terminal Sequence Analysis | Ala108 |
| Structure / Form | Disulfide-linked homodimer |
| Predicted Molecular Mass | 12 kDa (monomer) |

### SPECIFICATIONS

| SDS-PAGE | 12 kDa, reducing conditions |
| Activity | Measured in a cell proliferation assay using SH-SY5Y human neuroblastoma cells. The ED_{50} for this effect is 4-16 ng/mL. |
| Measured by its binding ability in a functional ELISA. Immobilized Recombinant Human GFRα3/GDNF Rα3 Fc Chimera (Catalog # 7269-FR) at 1 µg/mL (100 µL/well) can bind Recombinant Human Artemin with an apparent K_{d} <1 nM. |
| Endotoxin Level | <0.01 EU per 1 µg of the protein by the LAL method. |
| Purity | >95%, by SDS-PAGE under reducing conditions and visualized by silver stain. |
| Formulation | Lyophilized from a 0.2 µm filtered solution in HCl with BSA as a carrier protein. See Certificate of Analysis for details. |

### PREPARATION AND STORAGE

| Reconstitution | Reconstitute at 100 µg/mL in sterile 4 mM HCl containing at least 0.1% human or bovine serum albumin. |
| 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

Human Artemin (ARTN; also known as enovin and neublastin) is a GDNF family ligand that is distantly related to the TGF-β superfamily of molecules (1-4). As such, it is synthesized as a preproprotein, and contains a variable length pre-, or signal sequence, plus a 68 amino acid (aa) proregion and a 113 aa mature segment (5-7). Alternate splicing and start sites create signal sequences of 22, 30 and 39 aa, respectively. Their significance is unknown. Following synthesis and proteolytic processing, mature ARTN is secreted as a presumably glycosylated, 28 kDa disulfide-linked homodimer that contains three intrachain disulfide bonds and the typical TGF-β signature cysteine-knot motif (5, 7). In the mature region, human ARTN is 89% and 88% aa identical to rat (8) and mouse ARTN (5, 7), respectively. Cells known to express ARTN include Schwann cells (2) and embryonic vascular smooth muscle cells (9). Human ARTN is active on rodent cells (5). The receptor for ARTN has been identified as the ligand binding subunit GFRα3 plus the signal transducing subunit, RET (1, 5). The GFRα1/RET receptor complex has also been suggested to be a ligand binding unit for ARTN (2, 5). Evidence, however, suggests that the GFRα1/RET receptor complex plays no functional role in ARTN activity (10, 11). ARTN is known to be a chemoattractant for sympathetic neuron axons innervating the developing cardiovascular system (9). It also promotes sensory neuron survival and likely plays a role in the development of the peripheral nervous system (5). Finally, it has been reported to reverse neuropathic pain due to nerve injury, and to help resolve morphological changes associated with nerve damage (12).

### References: