Animal-Free™ Recombinant Human/Mouse/Rat/Porcine NT-3

Catalog Number: Qk058

DESCRIPTION

Source	*E. coli*-derived NT-3 protein Accession # P20783.1
Predicted Molecular Mass	27.3 kDa (dimer) & 13.7 kDa (monomer)

SPECIFICATIONS

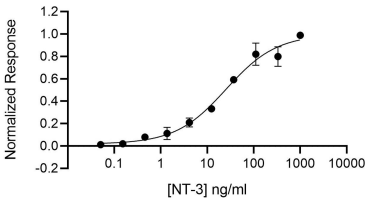
SDS-PAGE	Monomeric NT-3 protein only
Activity	No significant difference between EC_{50} of reference and test lots
Endotoxin Level	<0.10 EU per 1 µg of the protein by the LAL method.
Mass Spectrometry	Single species with expected mass
Formulation	Lyophilized from acetonitrile/TFA See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution	Resuspend in 10 mM HCl at >100 µg/mL, prepare single use aliquots, add carrier protein if desired.
Shipping	The product is shipped lyophilized at ambient temperture, on ice blocks or dry ice. Shipping at ambient temperture does not affect the bioactivity or stability of the protein. Upon reciept, store immediately at the conditions stated below.
Stability & Storage	BulkLotPrefix assignment required for Storage Info

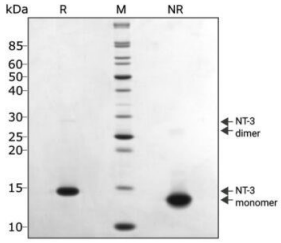
DATA

Bioactivity



Recombinant Human/Mouse/Rat NT-3, Animal-Free Protein Bioactivity
NT-3 bioactivity is measured using a luciferase reporter assay in HEK293T cells co-transfected with the TrkA receptor. Cells are treated in triplicate with a serial dilution of NT-3 for 3 hours. Firefly luciferase activity is measured and normalized to the control Renilla luciferase activity. EC_{50} = 25.4 ng/ml (0.93 nM).

SDS-PAGE



Recombinant Human/Mouse/Rat NT-3, Animal-Free Protein SDS-PAGE
Human NT-3 protein (Qk058) migrates mainly as a single band at 13.7 kDa in non-reducing (NR) conditions and upon reduction (R). Purified recombinant protein (3 µg) was resolved using 15% w/v SDS-PAGE in reduced (+β-mercaptoethanol, R) and non-reduced (-β-mercaptoethanol, NR) conditions and stained with Coomassie Brilliant Blue R-250. A faint band visible at 27.3 kDa in NR and R conditions, corresponds to the non-covalently linked NT-3 dimer. No contaminating bands are visible.

BACKGROUND

Neurotrophin-3 (NT-3) is a member of the NGF family of neurotrophic factors (also named neurotrophins) that are required for the differentiation and survival of specific neuronal subpopulations in both the central as well as the peripheral nervous systems. The neurotrophin family is comprised of at least four proteins including NGF, BDNF, NT-3, and NT-4/5. These secreted cytokines are synthesized as prepropeptides that are proteolytically processed to generate the mature proteins. All neurotrophins have six conserved cysteine residues that are involved in the formation of three disulfide bonds and all share approximately 55% sequence identity at the amino acid level. Similarly to NGF, bioactive NT-3 is predicted to be a non-covalently linked homodimer.

The NT-3 cDNA encodes a 257 amino acid residue precursor protein with a signal peptide and a proprotein that are cleaved to yield the 119 amino acid residue mature NT-3. The amino acid sequence of mature NT-3 is identical in human, mouse and rat. NT-3 transcripts have been detected in the cerebellum, hippocampus, placenta, heart, skin, and skeletal muscle. NT-3 primarily activates the TrkC tyrosine kinase receptor. In addition, NT-3 can activate Trk and TrkB kinase receptors in certain cell systems. NT-3 can also bind with low affinity to the low affinity NGF receptor.

References:

1. Eide, F.F. *et al.* (1993) Exp. Neurol. **121**:200.
2. Snider, W.D. (1994) Cell **77**:627.
3. Barbacid, M. (1994) J. Neurobiol. **25**:1386.

PRODUCT SPECIFIC NOTICES

The above product was manufactured, tested and released by R&D System's contract manufacturer, Qkine Ltd, at 1 Murdoch House, Cambridge, UK, CB5 8HW. The product is for research use only and not for the diagnostic or theraputic use.

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