Genorise® Recombinant Canine Neurotrophin-3 Protein DataSheet
Catalog Number: GR122075

Background

Neurotrophin-3 is a protein that in humans is encoded by the *NTF3* gene.[1] The protein encoded by this gene, NT-3, is a neurotrophic factor in the NGF (Nerve Growth Factor) family of neurotrophins. It is a protein growth factor which has activity on certain neurons of the peripheral and central nervous system; it helps to support the survival and differentiation of existing neurons, and encourages the growth and differentiation of new neurons and synapses. NT-3 was the third neurotrophic factor to be characterized, after nerve growth factor (NGF) and BDNF (Brain Derived Neurotrophic Factor).[2] Although the vast majority of neurons in the mammalian brain are formed prenatally, parts of the adult brain retain the ability to grow new neurons from neural stem cells; a process known as neurogenesis. Neurotrophins are chemicals that help to stimulate and control neurogenesis. NT-3 is unique in the number of neurons it can potentially stimulate, given its ability to activate two of the receptor tyrosine kinase neurotrophin receptors (TrkC and TrkB). Mice born without the ability to make NT-3 have loss of proprioceptive and subsets of mechanoreceptive sensory neurons.[3][4]

References

1. Maisonpierre PC, Le Beau MM, Espinosa R 3rd, Ip NY, Belluscio L, de la Monte SM, Squinto S, Furth ME, Yancopoulos GD (Oct 1991). "Human and rat brain-derived neurotrophic factor and neurotrophin-3: gene structures, distributions, and chromosomal localizations". *Genomics* **10** (3): 558–68.
2. Maisonpierre P, Belluscio L, Squinto S, Ip N, Furth M, Lindsay R, Yancopoulos G (1990). "Neurotrophin-3: a neurotrophic factor related to NGF and BDNF". *Science* **247** (4949 Pt 1): 1446–51.
3. Tessarollo L, Vogel K, Palko M, Reid S, Parada L (1994). "Targeted mutation in the neurotrophin-3 gene results in loss of muscle sensory neurons". *Proc Natl Acad Sci USA* **91** (25): 11844–8.
4. Klein R, Silos-Santiago I, Smeyne R, Lira S, Brambilla R, Bryant S, Zhang L, Snider W, Barbacid M (1994). "Disruption of the neurotrophin-3 receptor gene trkC eliminates la muscle afferents and results in abnormal movements". *Nature* **368** (6468): 249–51.

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Description

Source: *E. coli* derived
Amino acid sequence: Asp121-Thr270
Accession # A0A8C0KRC4
Predicted Molecular Mass: 17 kDa

Specifications

SDS-PAGE: 32 kDa, reducing conditions
Activity: Measured in a cell proliferation assay using BaF-TrkB-BD mouse pro-B cells transfected with TrkB. The ED_{50} for this effect is typically 1-8 ng/mL.
Endotoxin Level: < 0.1 EU per 1 μg of the protein by the LAL method.
Purity: > 95%, by SDSPAGE under reducing conditions and visualized by silver stain.
Formulation: Lyophilized from 0.2 μm filtered solution of PBS containing BSA as carrier protein.

Preparation and Storage

Reconstitution: Reconstitute at 50-100 μg/mL in sterile PBS with 0.1% BSA.
Shipping: The product is shipped at ambient temperature or in a foam box with ice pads. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage: Use a manual defrost freezer and avoid repeated freeze thaw cycles.

- 6 months from date of receipt, -20 to -70°C as supplied.
- 1 month, -20 to -70°C under sterile conditions after reconstitution.

DECLARATION

THIS REAGENT IS FOR IN VITRO LABORATORY TESTING AND RESEARCH USE ONLY. DO NOT USE IT FOR CLINICAL DIAGNOSTICS. DO NOT USE OR INJECT IT IN HUMANS AND ANIMALS.

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