

DESCRIPTION

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| Source | Mouse myeloma cell line, NS0-derived Gln23-Asn432, with a C-terminal 6-His tag Accession # Q15818 |
| N-terminal Sequence Analysis | No results obtained: Gln23 predicted, sequencing might be blocked |
| Predicted Molecular Mass | 45.8 kDa |

SPECIFICATIONS

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| SDS-PAGE | 53 kDa, reducing conditions |
| Activity | Measured by the ability of the immobilized protein to support the adhesion of TT human medullary thyroid cancer cells. The ED ₅₀ for this effect is 1.0-4.0 µg/mL. |
| Endotoxin Level | <0.10 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 PBS. See Certificate of Analysis for details. |

PREPARATION AND STORAGE

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| Reconstitution | Reconstitute at 400 µg/mL in PBS. |
| 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. <ul style="list-style-type: none"> ● 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

Neuronal Pentraxin (NPTX1; also called NP1) is a 47-50 kDa secreted glycoprotein within the Pentraxin family (1, 2). NPTX1 is co-expressed and forms heteromultimers with the related secreted protein, NPTX2/NARP, and type II transmembrane protein, NPTXR (Neuronal Pentraxin Receptor) at excitatory synapses (2-5). Human NPTX1 is a 432 amino acid (aa) protein that includes a 22 aa signal sequence and a 410 aa secreted mature protein with one calcium-binding Pentraxin domain (1, 2). Mature human NPTX1 shares 97% aa sequence identity with mouse, rat, bovine, porcine and canine NPTX1. NPTX1 is produced by hippocampal, cerebral and cerebellar neurons, retinal ganglia and the inner nuclear layer of the retina (1, 4-10). NPTX1 is up-regulated by conditions that promote neuronal apoptosis, such as amyloid-β, hypoxia/ischemia, and reduction of neuronal activity by potassium deprivation, and it participates in apoptosis (7-10). It is enriched on presynaptic axonal membranes where it forms complexes with NPTXR (3, 5). The complexes promote synaptogenesis by recruiting subunits of AMPA-type glutamate receptors (AMPA) (5, 11). Synaptic activity stimulates metabotropic receptors (mGluR), which then activate NPTXR cleavage and release of the complex from the membrane (4, 11). Pentraxin domains of NPTX1/2 within the complex mediate adhesion to AMPAR, while the soluble (but not transmembrane) form of NPTXR within the complex mediates AMPAR endocytosis (3, 11).

References:

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