Human Neuronal Pentraxin 2 Antibody

Monoclonal Mouse IgG_{2B} Clone # 569706

Catalog Number: MAB7816

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human Neuronal Pentraxin 2 in direct ELISAs.
Source	Monoclonal Mouse IgG_{2B} Clone # 569706
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	Mouse myeloma cell line, NS0-derived human Neuronal Pentraxin 2 Gly16-Leu431 Accession # P47972
Formulation	Lyophilized from a 0.2 μm filtered solution in PBS with Trehalose. See Certificate of Analysis for details. *Small pack size (-SP) is supplied either lyophilized or as a 0.2 μm filtered solution in PBS.

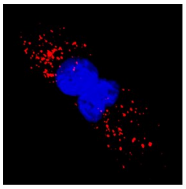
APPLICATIONS

Please Note: *Optimal dilutions should be determined by each laboratory for each application. General Protocols are available in the Technical Information section on our website.*

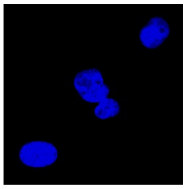
	Recommended Concentration	Sample
Immunocytochemistry	5-25 µg/mL	See Below
Immunohistochemistry	5-25 µg/mL	See Below

DATA

Immunocytochemistry



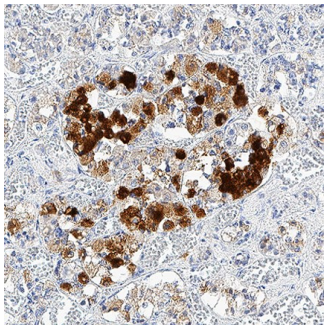
Positive (SH-SY5Y cells)



Negative (U-251 MG cells)

Neuronal Pentraxin 2 in SH-SY5Y Human Cell Line. Neuronal Pentraxin 2 was detected in immersion fixed SH-SY5Y human neuroblastoma cell line (left panel; positive staining) and U-251 MG human glioblastoma cell line (right panel; negative staining) using Mouse Anti-Human Neuronal Pentraxin 2 Monoclonal Antibody (Catalog # MAB7816) at 8 µg/mL for 3 hours at room temperature. Cells were stained using the NorthernLights™ 557-conjugated Anti-Mouse IgG Secondary Antibody (red; Catalog # NL007) and counterstained with DAPI (blue). Specific staining was localized to cytoplasm. View our protocol for Fluorescent ICC Staining of Cells on Coverslips.

Immunohistochemistry



Neuronal Pentraxin 2 in Human Pancreas Tissue. Neuronal Pentraxin 2 was detected in immersion fixed paraffin-embedded sections of human pancreas tissue using Mouse Anti-Human Neuronal Pentraxin 2 Monoclonal Antibody (Catalog # MAB7816) at 5 µg/mL for 1 hour at room temperature followed by incubation with the Anti-Mouse IgG VisUCyte™ HRP Polymer Antibody (Catalog # VC001). Before incubation with the primary antibody, tissue was subjected to heat-induced epitope retrieval using Antigen Retrieval Reagent-Basic (Catalog # CTS013). Tissue was stained using DAB (brown) and counterstained with hematoxylin (blue). Specific staining was localized to cytoplasm of pancreatic islets. View our protocol for IHC Staining with VisUCyte HRP Polymer Detection Reagents.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 0.5 mg/mL in sterile PBS.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below. *Small pack size (-SP) is shipped with polar packs. Upon receipt, store it immediately at -20 to -70 °C
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. • 6 months, -20 to -70 °C under sterile conditions after reconstitution.

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BACKGROUND

Neuronal Pentraxin (NPTX2), also called NP2 or NARP (neuronal activity-regulated pentraxin) is a 46-60 kDa secreted glycoprotein within the Pentraxin family (1-4). Neuronal pentraxins include NPTX1 and NPTX2, both secreted proteins, and NPTXR (Neuronal Pentraxin Receptor), which is found in type II transmembrane or cleaved, soluble forms (1-5). Circulating NPTX2 forms disulfide-linked 250 kDa homopentamers, while at excitatory synapses it can form heteropentamers and larger clusters with NPTX1 and NPTXR (1-5). The clusters promote synaptogenesis by recruiting subunits of AMPA-type glutamate receptors (AMPAR) (4-6). Of the three neuronal pentraxins, only NPTX2 shows immediate-early expression induced by synaptic activity (5, 6). Human NPTX2 is synthesized as a 431 amino acid (aa) protein with a 15 aa signal sequence and a 416 aa secreted mature protein that contains a calcium binding Pentraxin domain. Mature human NPTX2 shares 96% aa sequence identity with mouse, rat, bovine, and canine NPTX2. Unlike other neuronal pentraxins, NPTX2 expression is not limited to neurons and NPTX2 protein is detected in the plasma (1, 7). It is prominent in the hippocampus, cerebral cortex, cerebellum, hypothalamus, posterior pituitary, and retina (2-8). It is found at excitatory synapses in parvalbumin-expressing interneurons and vasopressin- and orexin-expressing hypothalamic neurons (5-7). Its expression is increased in the substantia nigra in Parkinson's disease, and it is present in Lewy bodies (9). NPTX2 shows calcium-dependent adhesion (3, 6). It promotes axon outgrowth in cortical explants, and formation, maturation and plasticity of synapses *in vivo* (3-6, 8).

References:

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