

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human Neuronal Pentraxin 2 in direct ELISAs.
Source	Monoclonal Mouse IgG ₁ Clone # 569703
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
Conjugate	Alexa Fluor 405 Excitation Wavelength: 405 nm Emission Wavelength: 421 nm
Formulation	Supplied 0.2mg/ml in 1X PBS with RDF1 and 0.09% Sodium Azide
*Contains <0.1% Sodium Azide, which is not hazardous at this concentration according to GHS classifications. Refer to the Safety Data Sheet (SDS) for additional information and handling instructions.	

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.

ELISA	Optimal dilution of this antibody should be experimentally determined.
Immunohistochemistry	Optimal dilution of this antibody should be experimentally determined.

PREPARATION AND STORAGE

Shipping	The product is shipped with polar packs. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	Protect from light. Do not freeze. 12 months from date of receipt, 2 to 8 °C as supplied

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 (AMPA) (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).

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