

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human Neuropilin-1 in direct ELISAs and Western blots. In direct ELISAs and Western blots, this antibody does not cross-react with recombinant rat (rr) Neuropilin-1 or rhNeuropilin-2.
Source	Monoclonal Mouse IgG ₁ Clone # 446915
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	Mouse myeloma cell line NS0-derived recombinant human Neuropilin-1 Phe22-Lys644 Accession # NP_001019799
Conjugate	Alexa Fluor 488 Excitation Wavelength: 488 nm Emission Wavelength: 515-545 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.

Western Blot 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

Neuropilin-1 (Npn-1, previously neuropilin; also known as CD304) is a 130-140 kDa type I transmembrane (TM) glycoprotein that regulates axon guidance and angiogenesis (1-4). The full-length 923 amino acid (aa) human Npn-1 contains a 623 aa extracellular domain (ECD) that shows 92-95% aa identity with mouse, rat, bovine and canine Npn-1 (3, 4). The ECD contains two N-terminal CUB domains (termed a1a2), two domains with homology to coagulation factors V and VIII (b1b2) and a MAM (meprin) domain (c). C-terminally divergent splice variants with 704, 644, 609, and 551 aa lack the MAM and TM domains and are demonstrated or presumed to be soluble antagonists (1, 5-7). A 906 aa form lacks a TM segment, but secretion has not been found (8). The sema domains of Class III secreted semaphorins such as Sema3A bind Npn-1 a1a2 (9). Heparin, the heparin-binding forms of VEGF (VEGF₁₆₅, VEGF-B, and VEGF-E), PIGF (PIGF-2), and the C-terminus of Sema3 bind the b1b2 region (9, 10). Npn-1 and Npn-2 share 48% aa identity within the ECD and can form homo- and hetero-oligomers via interaction of their MAM domains (1). Neuropilins show partially overlapping expression in neuronal and endothelial cells during development (1, 2). Both neuropilins act as co-receptors with plexins, mainly plexin A3 and A4, to bind class III semaphorins that mediate axon repulsion (11). However, only Npn-1 binds Sema3A, and only Npn-2 binds Sema3F (1). Both are co-receptors with VEGF R2 (also called KDR or Flk-1) for VEGF₁₆₅ binding (1). Sema3A signaling can be blocked by VEGF₁₆₅, which has higher affinity for Npn-1 (12). Npn-1 is preferentially expressed in arteries during development or those undergoing remodeling (1, 2). Npn-1 is also expressed on dendritic cells and mediates DC-induced T cell proliferation (13).

PRODUCT SPECIFIC NOTICES

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