

DESCRIPTION

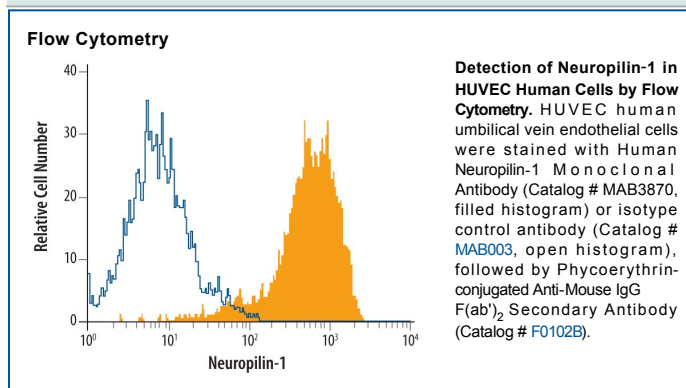
Species Reactivity	Human
Specificity	Detects human Neuropilin-1 in direct ELISAs.
Source	Monoclonal Mouse IgG _{2A} Clone # 446921
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	Mouse myeloma cell line NS0-derived recombinant human Neuropilin-1 Phe22-Lys644 Accession # NP_001019799
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose. See Certificate of Analysis for details.

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
Flow Cytometry	2.5 µg/10 ⁶ cells	See Below

DATA



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.
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 from date of receipt, 2 to 8 °C, reconstituted. ● 6 months from date of receipt, -20 to -70 °C, reconstituted.

BACKGROUND

Neuropilin-1 (Npn-1, previously neuropilin; also 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), PlGF (PlGF2), 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).

References:

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