Human Neuropilin-1
Alexa Fluor® 488-conjugated Antibody

Monoclonal Mouse IgG_{2A} Clone # 446921

Catalog Number: FAB3870G

100 µg

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
Conjugate	Alexa Fluor 488 Excitation Wavelength: 488 nm Emission Wavelength: 515-545 nm
Formulation	Supplied 0.2 mg/mL in a saline solution containing BSA and Sodium Azide. See Certificate of Analysis for details. *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.*

	Recommended Concentration	Sample
Flow Cytometry	0.25-1 µg/10^6 cells	HUVEC human umbilical vein endothelial cells

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 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 ($VEGF_{165}$, VEGF-B and VEGF-E), P*l*GF (P*l*GF2), 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 $VEGF_{165}$ binding (1). Sema3A signaling can be blocked by $VEGF_{165}$, 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:

1. Bielenberg, D.R. *et al.* (2006) Exp. Cell Res. **312**:584.
2. Gu, C. *et al.* (2003) Dev. Cell **5**:45.
3. He, Z. and M. Tessier-Lavigne (1997) Cell **90**:739.
4. Soker, S. *et al.* (1998) Cell **92**:735.
5. Gagnon, M.L. *et al.* (2000) Proc. Natl. Acad. Sci. USA **97**:2573.
6. Cackowski, F.C. *et al.* (2004) Genomics **84**:82.
7. Rossignol, M. *et al.* (2000) Genomics **70**:211.
8. Tao, Q. *et al.* (2003) Angiogenesis **6**:39.
9. Gu, C. *et al.* (2002) J. Biol. Chem. **277**:18069.
10. Mamluk, R. *et al.* (2002) J. Biol. Chem. **277**:24818.
11. Yaron, A. *et al.* (2005) Neuron **45**:513.
12. Narazaki, M. and G. Tosato (2006) Blood **107**:3892.
13. Tordjman, R. *et al.* (2002) Nat. Immunol. **3**477.

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