Human Neuropilin-2 Biotinylated Antibody

Antigen Affinity-purified Polyclonal Goat IgG
Catalog Number: BAF2215

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human Neuropilin-2 in Western blots. In Western blots, approximately 25% cross-reactivity with recombinant rat (rr) Neuropilin-2 is observed and less than 5% cross-reactivity with rrNeuropilin-1 is observed.
Source	Polyclonal Goat IgG
Purification	Antigen Affinity-purified
Immunogen	Mouse myeloma cell line NS0-derived recombinant human Neuropilin-2 Gln23-Tyr855 Accession # Q7LBX6
Formulation	Lyophilized from a 0.2 μm filtered solution in PBS with BSA as a carrier protein. 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
Western Blot	0.1 µg/mL	Recombinant Human Neuropilin-2 Fc Chimera (Catalog # 2215-N2)

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 0.2 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.** • 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.

BACKGROUND

Neuropilin-2 (Npn-2) is a 120 kDa, type I transmembrane (TM) glycoprotein that is related to the semaphorin receptor now known as Neuropilin-1 (1). Npn-2 is a complex molecule with multiple splice forms. Five transmembrane forms are known, and one 62 kDa soluble form has been identified (2). Based on the originally reported precursor size of 909 amino acids (aa), the “standard” precursor in human will have a 20 aa signal sequence, an 842 aa extracellular region, a 25 aa TM segment, and a 42 aa cytoplasmic tail (1). The extracellular region contains two N-terminal CUB (C1r/Ugef/BMP-1) domains, two jellyroll-shaped coagulation factor V type C domains, and a juxtamembrane MAM (meprin/A-5 protein/tyrosine phosphatase μ) domain (1, 3). The CUB and factor V domain are involved in VEGF and semaphorin binding. The MAM domain appears necessary for signaling through plexin-1 (4). The five transmembrane isoforms all share the same CUB, factor V and MAM domains. Splicing begins at aa 809, seven amino acids after the end of the MAM domain, and it involves the end of the extracellular region, the TM segment, and the cytoplasmic domain (a total of 101 aa). Two of the four variants show a complete replacement of these 101 aa with a totally unrelated stretch of approximately 90 aa. This creates a new TM and cytoplasmic tail. These forms are called “Npn-2b” forms. Two other isoforms (plus the standard 909 aa form) retain the 101 aa stretch, and add either 17 or 22 aa to the end of the extracellular region. These forms are called “Npn-2a” forms. The isoform offered by R&D Systems is the “a” form with the 17 aa addition. This isoform shows 94% aa identity to the equivalent regions in mouse and rat Npn-2. The soluble form of Npn-2 is 555 aa in precursor length, and contains the two CUB domains plus the first 1½ factor V type C domains (1). Npn-2 binds Sema3B through F, and VEGF isoforms 165, 145, PlGF-2, and VEGF-C (5). It is known to form homodimers and heterodimers with Npn-1, and it forms receptor complexes with plexin-1 and VEGF R1 (4, 5). Npn-2 is found on a variety of cell types including neurons (motor, autonomic, sensory), vascular endothelial cells, Schwann cells and pancreatic acinar cells.

References:

1. Chen, H. *et al.* (1997) Neuron **19**:547.
2. Rossignol, M. *et al.* (2000) Genomics **70**:211.
3. He, Z. and M. Tessier-lavigne (1997) Cell **90**:739.
4. Nakamura, F. and Y. Goshima (2002) Adv. Exp. Med. Biol. **515**:55.
5. Neufeld, G. *et al.* (2002) Adv. Exp. Med. Biol. **515**:81.

PRODUCT SPECIFIC NOTICES

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U.S. Patent # 6,054,293, 6,623,738, and other U.S. and international patents pending.

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