

PRODUCT INFORMATION



Neuropilin-2a Extracellular Domain (human, recombinant)

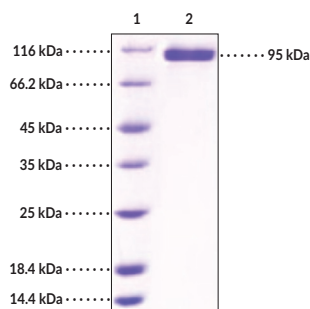
Item No. 38068

Overview and Properties

Synonyms: NRP2a, Vascular Endothelial Cell Growth Factor₁₆₅ Receptor 2a, VEGF₁₆₅ Receptor 2a
Source: Active recombinant human C-terminal His-tagged neuropilin-2a extracellular domain expressed in HEK293 cells
Amino Acids: 23-855
Uniprot No.: O60462
Molecular Weight: 95 kDa
Storage: -80°C (as supplied)
Stability: ≥1 year
Purity: ≥95% estimated by SDS-PAGE
Supplied in: Lyophilized from sterile PBS, pH 7.4
Endotoxin Testing: <1.0 EU/μg, determined by the LAL endotoxin assay
Bioactivity: See figures for details
Specific Activity: *batch specific*

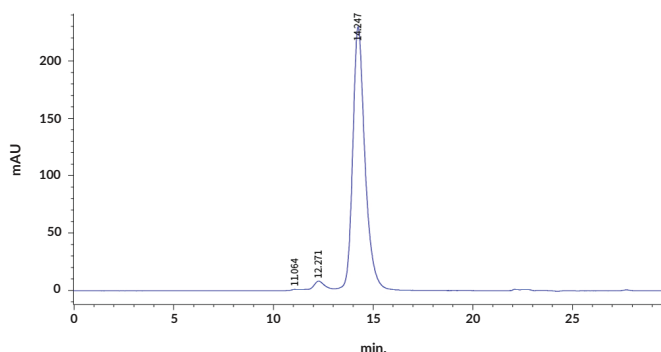
Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Images



Lane 1: MW Markers
Lane 2: Neuropilin-2a Extracellular Domain

SDS-PAGE Analysis of Neuropilin-2a Extracellular Domain.
This protein has a calculated molecular weight of 95 kDa.
It has an apparent molecular weight of approximately 100-110 kDa by SDS-PAGE under reducing conditions due to glycosylation.



WARNING
THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA
This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the [complete](#) Safety Data Sheet, which has been sent via email to your institution.

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CAYMAN CHEMICAL

1180 EAST ELLSWORTH RD
ANN ARBOR, MI 48108 · USA

PHONE: [800] 364-9897

[734] 971-3335

FAX: [734] 971-3640

CUSTSERV@CAYMANCHEM.COM

WWW.CAYMANCHEM.COM

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Description

Neuropilin-2 (NRP-2) is a non-tyrosine kinase transmembrane glycoprotein co-receptor for class III semaphorins and VEGFs.¹ It is composed of two CUB domains (a1 and a2), two Factor V/VIII homology domains (b1 and b2), a MAM domain, a transmembrane region, and a cytoplasmic tail. The a1, a2, and b1 domains are responsible for binding to class III semaphorins, including semaphorin-3C (Sema3C) and Sema3F, the b1 and b2 domains are responsible for binding to VEGFs, including VEGFA₁₆₅, VEGFA₁₄₅, VEGFC, VEGFD, and placenta growth factor (PIGF), and the MAM domain is important for homo- or heterodimerization.^{1,2} NRP-2 exists in three main isoforms: membrane-bound NRP-2a and NRP-2b, which are generated by alternative splicing and differ by the presence or absence, respectively, of the PDZ binding motif in the C-terminus, and soluble NRP-2 (sNRP-2), which is composed of the a1, a2, and b1 domains and a partial b2 domain.¹ NRP-2a is expressed in the brain, heart, kidney, liver, lungs, placenta, trachea, and small intestine.³ NRP-2 is a co-receptor for VEGFR2 and VEGFR3 and is involved in angiogenesis, lymphangiogenesis, and neuronal guidance, as well as some immune functions such as T cell migration.^{1,2,4} Knockout of *Nrp2a* induces misprojections of axons originating from olfactory sensory neurons expressing transient receptor potential canonical 2 (TRPC2) in zebrafish.⁴ High tumoral expression of *NRP2A* is associated with poor overall survival in patients with muscle-invasive bladder cancer.⁵ Cayman's Neuropilin-2a Extracellular Domain (human, recombinant) protein can be used for ELISA. This protein consists of 844 amino acids, has a calculated molecular weight of 95 kDa, and a predicted N-terminus of Gln23 after signal peptide cleavage. By SDS-PAGE, under reducing conditions, the apparent molecular mass of the protein is 100-110 kDa due to glycosylation.

References

1. Roy, S., Bag, A.K., Singh, R.K., *et al.* Multifaceted role of neuropilins in the immune system: Potential targets for immunotherapy. *Front. Immunol.* **8**, 1228 (2017).
2. Rapisarda, A. and Melillo, G. Role of the VEGF/VEGFR axis in cancer biology and therapy. *Advances in cancer research*. Daar, I.O., editor, *Elsevier* (2012).
3. Rossignol, M., Gagnon, M.L., and Klagsbrun, M. Genomic organization of human neuropilin-1 and neuropilin-2 genes: Identification and distribution of splice variants and soluble isoforms. *Genomics* **70**(2), 11-22 (2000).
4. Cheng, R.P., Dang, P.M.C., Taku, A.A., *et al.* Loss of neuropilin2a/b or sema3fa alters olfactory sensory axon dynamics and protoglomerular targeting. *Neural Dev.* **17**(1), 1 (2022).
5. Förster, S., Givèhchi, M., Nitschke, K., *et al.* Neuropilin-2 and its transcript variants correlate with clinical outcome in bladder cancer. *Genes (Basel)* **12**(4), 550 (2021).

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