

## Neuropilin-1 Protein, Human (644a.a, HEK293, His)

<b>Cat. No.:</b>	HY-P73311
<b>Synonyms:</b>	Neuropilin-1, His; CD304; NRP1; NRPNP1; VEGF165R; BDCA4
<b>Species:</b>	Human
<b>Source:</b>	HEK293
<b>Accession:</b>	NP_001019799.1 (F22-K644)
<b>Gene ID:</b>	8829
<b>Molecular Weight:</b>	Approximately 90 kDa

### PROPERTIES

#### AA Sequence

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FRNDKCGDTI   KIESPGYLT S   PGYPHSYHPS   EKCEWLIQAP
DPYQRIMINF   NPHFDLEDRD   CKYDYVEVFD   GENENGHFRG
KFCGKIAPPP   VVSSGPFLFI   KFVSDYETHG   AGFSIRYEIF
KRGPECSQNY   TTPSGVIKSP   GFPEKYPNSL   ECTYIVFAPK
MSEIILEFES   FDLEPDSNPP   GGMFCRYDRL   EIWDGFPDVG
PHIGRYCGQK   TPGRIRSSSG   ILSMVFYTDS   AIAKEGFSAN
YSVLQSSVSE   DFKCMEALGM   ESGEIHSDQI   TASSQYSTNW
SAERSRLNYP   ENGWTPEGEDS  YREWIQVDLG   LLRFVTVAVGT
QGAISKETKK   KYVVKTYKID   VSSNGEDWIT   IKEGNKPVLF
QGNTNPTDVV   VAVFPKPLIT   RFVRIKPATW   ETGISMRFEV
YGCKITDYPC   SGMLGMVSL   ISDSQITSSN   QGDRNWMPEN
IRLVTSRSGW   ALPPAPHSYI   NEWLQIDLGE   EKIVRGI I I Q
GGKHRENKVF   MRKFKIGYSN   NGSDWKIMD   DSKRKAKSFE
GNNNYDTP EL   RTFPALSTRF   IRIYPERATH   GGLGLRMELL
GCEVEAPTAG   PTTPNGNLVD   ECDDQANCH   SGTGDDFQLT
GGTTVLATEK   PTVIDSTIQS   GIK
  
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#### Biological Activity

1. Using the Octet RED System, the affinity constant (Kd) of NRP1-His bound to human VEGF165 was 25 nM.  
 2. Measured by its binding ability in a functional ELISA. Immobilized Recombinant Human / Cynomolgus VEGF / VEGFA / VEGF165 Protein at 2 µg/mL (100 µL/well) can bind Recombinant Human Neuropilin-1 / NRP1 / CD304 Protein (His Tag) with a linear range of 32-160 µg/mL.

#### Appearance

Lyophilized powder.

#### Formulation

Lyophilized from a 0.2 µm filtered solution of PBS, pH 7.4. Normally 5% - 8% trehalose, mannitol and 0.01% Tween 80 are added as protectants before lyophilization.

#### Endotoxin Level

<1 EU/µg, determined by LAL method.

#### Reconstitution

It is not recommended to reconstitute to a concentration less than 100 µg/mL in ddH<sub>2</sub>O.

**Storage & Stability**

Stored at -20°C for 2 years. After reconstitution, it is stable at 4°C for 1 week or -20°C for longer (with carrier protein). It is recommended to freeze aliquots at -20°C or -80°C for extended storage.

**Shipping**

Room temperature in continental US; may vary elsewhere.

**DESCRIPTION****Background**

Neuropilin-1 (NRP1) is one of two neuropilins, which contain specific protein domains which allow them to participate in several different types of signaling pathways that control cell migration. NRP1 contains a large N-terminal extracellular domain, made up of complement-binding, coagulation factor V/VIII, and meprin domains, it also contains a short membrane-spanning domain and a small cytoplasmic domain.

NRP1 acts as a cell-surface receptor which is involved in the development of the cardiovascular system, angiogenesis, the formation of certain neuronal circuits and organogenesis outside the nervous system as well as mediates the chemorepulsant activity of semaphorins. NRP1 also recognizes a C-end rule (CendR) motif R/KXXR/K on its ligands which causes cellular internalization and vascular leakage.

NRP1 binds many ligands and various types of co-receptors to affect cell survival, migration, and attraction. Some of the ligands and co-receptors bound by NRP1 are vascular endothelial growth factor (VEGF) and semaphorin family members. NRP1 also acts as a host factor for human coronavirus SARS-CoV-2 infection as NRP1 recognizes and binds to CendR motif RRAR on SARS-CoV-2 spike protein S1 which enhances SARS-CoV-2 infection<sup>[1][2][3][4]</sup>.

**Caution: Product has not been fully validated for medical applications. For research use only.**

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