



### Neuropilin-1 is a host factor for SARS-CoV-2 infection

Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), the causative agent of coronavirus disease 2019 (COVID-19), uses the viral spike (S) protein for host cell attachment and entry. The host protease furin cleaves the full-length precursor S glycoprotein into two associated polypeptides: S1 and S2. Cleavage of S generates a polybasic Arg-Arg-Ala-Arg carboxyl-terminal sequence on S1, which conforms to a C-end rule (CendR) motif that binds to cell surface neuropilin-1 (NRP1) and NRP2 receptors. We used x-ray crystallography and biochemical approaches to show that the S1 CendR motif directly bound NRP1. Blocking this interaction by RNA interference or selective inhibitors reduced SARS-CoV-2 entry and infectivity in cell culture. NRP1 thus serves as a host factor for SARS-CoV-2 infection and may potentially provide a therapeutic target for COVID-19. Daly JL, et al. Science. 2020 Nov 13;370(6518): 861-865. doi: 10.1126/science.abd3072. Epub 2020 Oct 20.

### Neuropilin-1 facilitates SARS-CoV-2 cell entry and infectivity

The causative agent of coronavirus disease 2019 (COVID-19) is the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). For many viruses, tissue tropism is determined by the availability of virus receptors and entry cofactors on the surface of host cells. In this study, we found that neuropilin-1 (NRP1), known to bind furin-cleaved substrates, significantly potentiates SARS-CoV-2 infectivity, an effect blocked by a monoclonal blocking antibody against NRP1. A SARS-CoV-2 mutant with an altered furin cleavage site did not depend on NRP1 for infectivity. Pathological analysis of olfactory epithelium obtained from human COVID-19 autopsies revealed that SARS-CoV-2 infected NRP1-positive cells facing the nasal cavity. Our data provide insight into SARS-CoV-2 cell infectivity and define a potential target for antiviral intervention.

Cantuti-Castelvetri L., et al. Science. 2020 Nov 13;370(6518):856-860. doi: 10.1126/science.abd2985. Epub 2020 Oct 20.

### High Sensitivity Soluble Neuropilin 1 (sNRP1) Human ELISA Kit

Code No.: SK00270-06

Size: 96T

Price: \$560.00 USD

Standard Range: 19.5 ~ 1250 pg/ml

Sensitivity: 5 pg/ml

Calibration: Human NRP1 Isoform 2 (HEK293)

Specificity: Human Soluble NRP1

Sample Type: Serum, plasma

Dilution Factor: 80 ~ 160 or higher

Intra-CV: 4-6%

Inter-CV: 4-8%

Data Sheet:PDF

### High Sensitivity Soluble Neuropilin-1 Human ELISA Kit

Catalog No.: SK00270-06

Size: 96 T

Catalog No.: SK00270-06B

Size: 192 T

Catalog No.: SK00270-06F

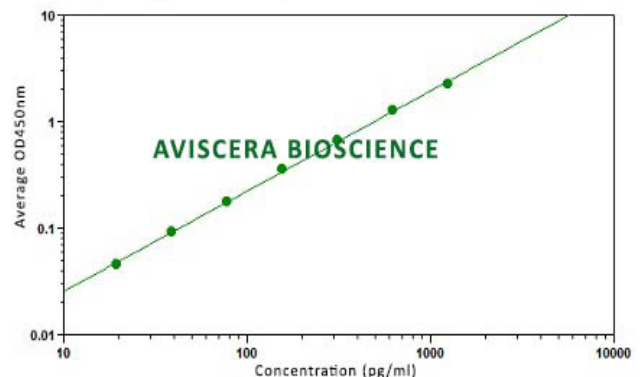
Size: 480 T

Standard range: 19.5 ~ 1250 pg/mL

Sensitivity: 5 pg/mL

Calibration: rh neuropilin 1 (Isoform B) (HEK293)

Sample Type: Serum, Plasma



**Not only ACE2-the quest for additional host cell mediators of SARS-CoV-2 infection: Neuropilin-1 (NRP1) as a novel SARS-CoV-2 host cell entry mediator implicated in COVID-19.**

**Kyrou I, et al. Signal Transduct Target Ther. 2021 Jan 18;6(1):21.**

Computational screening of potential drugs against COVID-19 disease: the Neuropilin-1 receptor as molecular target.

Charoute H, et al. Virusdisease. 2022 Jan 21:1-9. doi: 10.1007/s13337-021-00751-x.

Benedicto A, et al. Neuropilin-1: A feasible link between liver pathologies and COVID-19. World J Gastroenterol. 2021 Jun 28;27(24):3516-3529.

The research samples were diluted by Dilution Buffer DB03. Its linearity and recovery was assayed by SK00270-08

Sample Type	Dilution Factor	Assayed (ng/mL)	Final (ng/mL)	Recovery (%)
Human Serum	20X	7.000	140.000	100
Human Serum	40X	3.636	145.440	104
Human Serum	80X	1.691	135.280	96.6
Human Plasma	40X	2.917	116.680	100
Human Plasma	80X	1.486	118.880	102

**Soluble Neuropilin 1 (sNRP1) Human ELISA Kit**

Code No.: SK00270-08

Size: 96T

Price: \$490.00 USD

Standard Range: 0.156 ~ 10 ng/ml

Sensitivity: 0.05 ng/ml

Calibration: Human NRP1 Isoform 2 (HEK293)

Specificity: Human Soluble NRP1

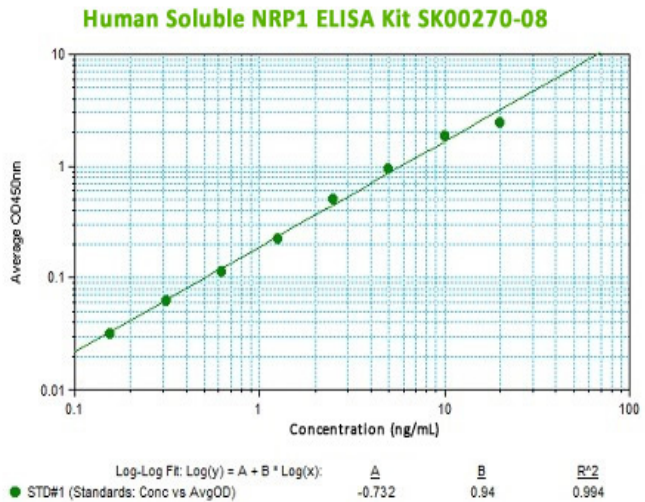
Sample Type: Serum, plasma

Dilution Factor: 40 ~ 80 or higher

Intra-CV: 4-6%

Inter-CV: 4-8%

Data Sheet:PDF



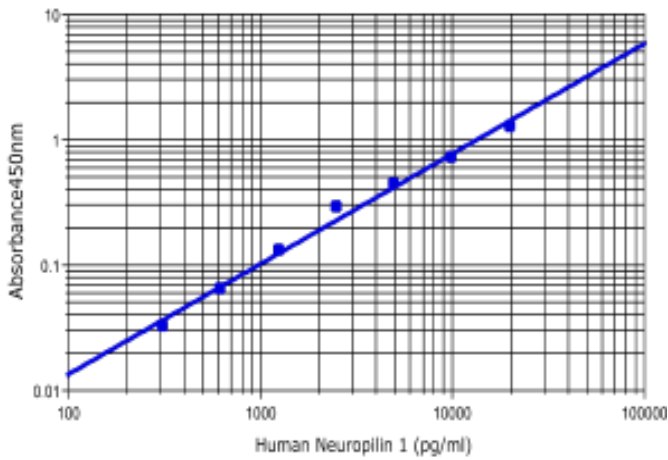
**Soluble Neuropilin 1 (sNRP1) Human ELISA Kit**

Code No.: SK00270-01
Size: 96T
Price: \$460.00 USD
Standard Range: 0.312 ~ 20 ng/ml
Sensitivity: 0.1 ng/ml
Calibration: Human NRP1 Isoform 2 (HEK293)
Specificity: Human Soluble NRP1
Sample Type: Serum, plasma
Dilution Factor: 40 ~ 80 or higher
Intra-CV: 4-6%
Inter-CV: 4-8%
Data Sheet:PDF

**Soluble Neuropilin 1 (sNRP2) Human ELISA Kit**

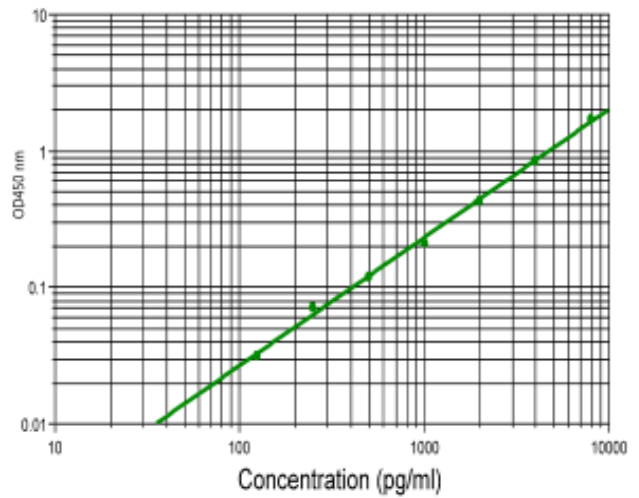
Code No.: SK00520-01
Size: 96T
Price: \$460.00
Standard Range: 125 ~ 8000 pg/ml
Sensitivity: 30 pg/ml
Calibration: Human Soluble NRP2 (HEK293)
Specificity: Human Soluble NRP2
Sample Type: Serum, plasma
Dilution Factor:
Intra-CV: 4-6%
Inter-CV: 4-8%
Data Sheet:PDF

**Human Soluble Neuropilin 1 ELISA Kit SK00270-01**



Log(y) = A + B \* Log(x): A B R<sup>2</sup>  
 ■ STD#1 (Standards: Concentration vs Mean OD Val... -3.636 0.879 0.99

**Human Soluble Neuropilin-2 ELISA Kit SK00520-01**



Log-Log Fit: Log(y) = A + B \* Log(x): A B R<sup>2</sup>  
 ■ STD#1 (Standards: Conc vs AvgOD) -3.46 0.939 0.998

## Human Neuropilin-1, Isoform 2

```

10      20      30      40      50      60
MERGLPLLCA VLALVLAPAG AFRNDKCGDT IKIESPGYLT SPGYPHSYHF SERCEWLIQA

70      80      90      100     110     120
PDPYQRIMIN FNFPHFLEDR DCKYDYVEVF DGENENGHFR GKFCGKIAPF FVSSSGPFLF

130     140     150     160     170     180
IKFVSDYETH GAGFSIRYEI FKRGPCCSQN YTPSGVIKS PGFPEKYPNS LECTYIVFVF

190     200     210     220     230     240
FMSEIILEFE SFDLEPDSNP FGGMFCRYDR LEIWDGFPDV GPRIGRYCGQ RTPGRIRSSS

250     260     270     280     290     300
GILSMVFYTD SAIAREGFSA NYSVLQSSVS EDFKCEALG MESGEIHSQD ITASSQYSTN

310     320     330     340     350     360
WSAERSRLNY FENGWTFGED SYREWIQVDL GLLRFVTAVG TQGAISKETH KRYIVRTYKI

370     380     390     400     410     420
DVSSNGEDWI TIKEGNKFVL FQGNTNPTDV VVAVFFKPLI TRFVRIKPAT WETGISMPFE

430     440     450     460     470     480
VYGCKITDYF CSGMLGRVSG LISDSQITSS NQGDNRWMPF NIRLVTSRSG WALPFAPHSY

490     500     510     520     530     540
INEWLQIDLG EEKIVRGIIT QGGKHRENKV FMRKFKIGYS NNGSDWEMIM DDSKRKAKSP

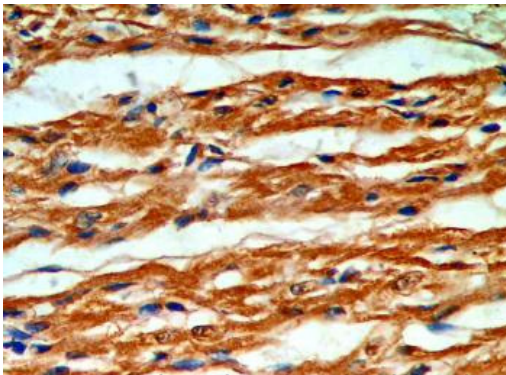
550     560     570     580     590     600
EGNNNYDTPE LRTFFALSTR FIRIYPERAT HGGLGLRMLL LGCEVEAPTA GPTTENGMLV

610     620     630     640
DECDDQANC HSGTGDDFQL TGQTVLATE KPTVIDSTIQ SGIR 644
    
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AVISCERA BIOSCIENCE

### Human NRP1, Isoform 2

22 644



Immunostaining human heart tissues by Rabbit Anti Neuropilin-1, isoform 1 (Human) IgG (A00149-01-100) at 2-4  $\mu$ g/ml (ABC)

### Anti NRP1 ECD (Human) IgG

A00149-01-100

172 KD

83 KD

62 KD

NRP1

Rat heart tissues homogenates under reduce condition

## Human NRP1 Rec (HEK293)

00270-11-50



## Human Soluble Neuropilin-1 Isoform 2 recombinant

00270-01-100

