SANTA CRUZ BIOTECHNOLOGY, INC.

NK-1R (F-3): sc-514453

BACKGROUND

The substance P receptor, also designated NK-1R for neurokinin 1 receptor, is a member of a class of tachykinin receptors which also includes the NK-2 receptor and the NK-3 receptor. Substance P receptors bind to tachykinin peptides, including substance P, substance K and neuromedin K. NK-1R is likely to be involved in nociceptive transmission, basal ganglia function or anxiety and depression. NK-1R is expressed in a high proportion of spinothalmic and spinobranchial neurons located in lamina 1. NK-1R neurons in the dorsal horn of the spinal cord may play a role in chronic neuropathic and inflammatory pain. Ligand-induced internalization of NK-1R into early endosomes deplete the cell surface of these receptors. This internalization may be involved in a down-regulation response of a cell to substance P.

REFERENCES

1. Takeda, Y., et al. 1991. Molecular cloning, structural characterization and functional expression of the human substance P receptor. Biochem. Biophys. Res. Commun. 179: 1232-1240.
2. Garland, A.M., et al. 1994. Agonist-induced internalization of the substance P (NK1) receptor expressed in epithelial cells. Biochem. J. 303: 177-186.
3. Mantyh, P.W., et al. 1995. Receptor endocytosis and dendrite reshaping in spinal neurons after somatosensory stimulation. Science 268: 1629-1632.
4. Saria, A. 1999. The tachykinin NK1 receptor in the brain: pharmacology and putative functions. Eur. J. Pharmacol. 375: 51-60.
5. Ding, Y.Q., et al. 1999. The distribution of substance P receptor (NK1)-like immunoreactive neurons in the newborn and adult human spinal cord. Neurosci. Lett. 266: 133-136.
6. Nichols, M.L., et al. 1999. Transmission of chronic nociception by spinal neurons expressing the substance P receptor. Science 286: 1558-1561.

CHROMOSOMAL LOCATION

Genetic locus: TACR1 (human) mapping to 2p12; Tacr1 (mouse) mapping to 6 C3.

SOURCE

NK-1R (F-3) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 374-391 near the C-terminus of NK-1R of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-514453 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

APPLICATIONS

NK-1R (F-3) is recommended for detection of NK-1R of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for NK-1R siRNA (h): sc-36069, NK-1R siRNA (m): sc-36070, NK-1R shRNA Plasmid (h): sc-36069-SH, NK-1R shRNA Plasmid (m): sc-36070-SH, NK-1R shRNA (h) Lentiviral Particles: sc-36069-V and NK-1R shRNA (m) Lentiviral Particles: sc-36070-V.

Molecular Weight (predicted) of NK-1R: 46 kDa.

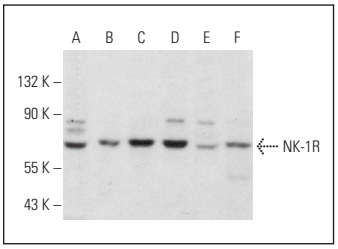
Molecular Weight (observed) of NK-1R glycosylation: 74/101 kDa.

Positive Controls: K-562 whole cell lysate: sc-2203, Jurkat whole cell lysate: sc-2204 or HL-60 whole cell lysate: sc-2209.

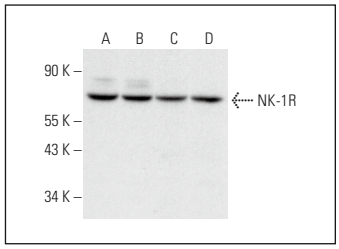
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



NK-1R (F-3): sc-514453. Western blot analysis of NK-1R expression in THP-1 (**A**), CCD-1064Sk (**B**), WEHI-231 (**C**), RAW 264.7 (**D**), KNRK (**E**) and PC-12 (**F**) whole cell lysates.



NK-1R (F-3): sc-514453. Western blot analysis of NK-1R expression in K-562 (**A**), Jurkat (**B**), HL-60 (**C**) and U-937 (**D**) whole cell lysates.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.