

NK-1R (D-11): sc-365091

The Power to Question

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 spinothalamic and spinobrachial 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.

CHROMOSOMAL LOCATION

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

SOURCE

NK-1R (D-11) is a mouse monoclonal antibody raised against amino acids 325-407 mapping near the C-terminus of NK-1R of human origin.

PRODUCT

Each vial contains 200 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

NK-1R (D-11) is available conjugated to agarose (sc-365091 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-365091 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-365091 PE), fluorescein (sc-365091 FITC), Alexa Fluor® 488 (sc-365091 AF488), Alexa Fluor® 546 (sc-365091 AF546), Alexa Fluor® 594 (sc-365091 AF594) or Alexa Fluor® 647 (sc-365091 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-365091 AF680) or Alexa Fluor® 790 (sc-365091 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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APPLICATIONS

NK-1R (D-11) 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), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000). NK-1R (D-11) is also recommended for detection of NK-1R in additional species, including equine, canine, bovine and porcine.

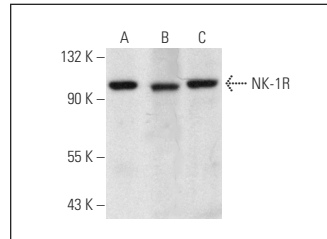
Suitable for use as control antibody for NK-1R siRNA (h): sc-36069, NK-1R siRNA (m): sc-36070, NK-1R shRNA Plasmid (h): sc-36069-SH, NK-1R shRNA Plasmid (m): sc-36070-SH, NK-1R shRNA (h) Lentiviral Particles: sc-36069-V and NK-1R shRNA (m) Lentiviral Particles: sc-36070-V.

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

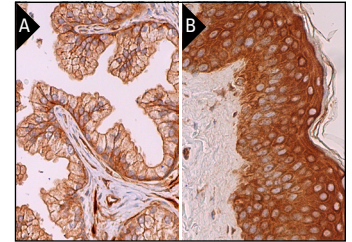
Molecular Weight (observed) of NK-1R glycosylation: 74/101 kDa.

STORAGE

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

DATA

NK-1R (D-11): sc-365091. Western blot analysis of NK-1R expression in WEHI-3 (A), K-562 (B) and CCD-1064Sk (C) whole cell lysates.



NK-1R (D-11): sc-365091. Immunoperoxidase staining of formalin fixed, paraffin-embedded human prostate tissue showing membrane and cytoplasmic staining of glandular cells (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human skin tissue showing cytoplasmic staining of keratinocytes, fibroblasts, Langerhans cells and melanocytes (B).

SELECT PRODUCT CITATIONS

- Sumpter, T.L., et al. 2015. Autocrine hemokinin-1 functions as an endogenous adjuvant for IgE-mediated mast cell inflammatory responses. *J. Allergy Clin. Immunol.* 135: 1019-1030.e8.
- García-Ortega, J., et al. 2016. Expression of tachykinins and tachykinin receptors and interaction with kisspeptin in human granulosa and cumulus cells. *Biol. Reprod.* 94: 124.
- Wu, H., et al. 2018. NK-1R/5-HT1AR interaction is related to the regulation of melanogenesis. *FASEB J.* 32: 3193-3214.
- Blass, G., et al. 2019. Postprandial effects on ENaC-mediated sodium absorption. *Sci. Rep.* 9: 4296.
- Morelli, A.E., et al. 2020. Neurokinin-1 receptor signaling is required for efficient Ca²⁺ flux in T-cell-receptor-activated T cells. *Cell Rep.* 30: 3448-3465.e8.
- Ma, L., et al. 2021. Involvement of 5-serotonin and substance P pathways in dichroa alkali salt-induced acute pica in rats. *Front. Pharmacol.* 12: 588837.
- Ito, A., et al. 2021. Cytohesin-2 mediates group I metabotropic glutamate receptor-dependent mechanical allodynia through the activation of ADP ribosylation factor 6 in the spinal cord. *Neurobiol. Dis.* 159: 105466.
- Silva, F., et al. 2022. Radiolabeled gold nanoseeds decorated with substance P peptides: synthesis, characterization and *in vitro* evaluation in glioblastoma cellular models. *Int. J. Mol. Sci.* 23: 617.
- Follansbee, T., et al. 2022. Inhibition of itch by neurokinin 1 receptor (Tac1)-expressing ON cells in the rostral ventromedial medulla in mice. *Elife* 11: e69626.

RESEARCH USE

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