

VR1 (N-15): sc-12500

BACKGROUND

Vanilloid receptor 1 (VR1), also designated capsaicin receptor, is a nonselective cation channel, structurally related to members of the TRP family of ion channels. VR1 is activated by capsaicin, the active ingredient in chili peppers, by heat and by an increase in protons at sites of infection, inflammation and ischemia. By creating moderately acidic conditions, protons are able to lower the temperature threshold for VR1 activation, thus identifying VR1 as a molecular integrator of chemical and physical stimuli that elicit pain. VR1 is expressed in primary sensory neurons and vagal nerves and activated VR1 induces the influx of cations, particularly Ca²⁺ and Na⁺ ions. The vanilloid receptor may also be a molecular target for endogenous anandamide, in addition to the cannabinoid receptors, in the nervous and cardiovascular systems.

REFERENCES

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3. Cesare, P., et al. 1999. Ion channels gated by heat. *PNAS* 96: 7658-7663.
4. Sasamura, T., et al. 1999. Peripheral and central actions of capsaicin and VR1 receptor. *Jpn. J. Pharmacol.* 80: 275-280.
5. Zygmunt, P.M., et al. 1999. Vanilloid receptors on sensory nerves mediate the vasodilator action of anandamide. *Nature* 400: 452-457.
6. Jin, Y.H., et al. 2004. Purinergic and vanilloid receptor activation releases glutamate from separate cranial afferent terminals in nucleus tractus solitarius. *J. Neurosci.* 24: 4709-4717.
7. Jung, J., et al. 2004. Phosphorylation of vanilloid receptor 1 by Ca²⁺/calmodulin-dependent kinase II regulates its vanilloid binding. *J. Biol. Chem.* 279: 7048-7054.
8. Morenilla-Palao, C., et al. 2004. Regulated exocytosis contributes to protein kinase C potentiation of vanilloid receptor activity. *J. Biol. Chem.* 279: 25665-25672.

CHROMOSOMAL LOCATION

Genetic locus: TRPV1 (human) mapping to 17p13.2.

SOURCE

VR1 (N-15) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of VR1 of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-12500 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

RESEARCH USE

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

APPLICATIONS

VR1 (N-15) is recommended for detection of VR1 of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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).

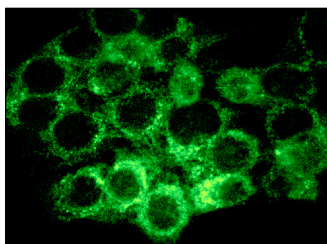
VR1 (N-15) is also recommended for detection of VR1 in additional species, including canine and bovine.

Suitable for use as control antibody for VR1 siRNA (h): sc-36826, VR1 shRNA Plasmid (h): sc-36826-SH and VR1 shRNA (h) Lentiviral Particles: sc-36826-V.

Molecular Weight of VR1: 100 kDa.

Positive Controls: HeLa nuclear extract: sc-2120, SK-N-MC nuclear extract: sc-2154 or THP-1 cell lysate: sc-2238.

DATA



VR1 (N-15): sc-12500. Immunofluorescence staining of methanol-fixed NIH/3T3 cells showing membrane localization.

SELECT PRODUCT CITATIONS

1. Lazar, J., et al. 2003. Distinct features of recombinant rat vanilloid receptor-1 expressed in various expression systems. *Cell. Mol. Life Sci.* 60: 2228-2240.
2. Lazar, J., et al. 2004. Sensitization of recombinant vanilloid receptor-1 by various neurotrophic factors. *Life Sci.* 75: 153-163.
3. Lazzeri, M., et al. 2004. Immunohistochemical evidence of vanilloid receptor 1 in normal human urinary bladder. *Eur. Urol.* 46: 792-798.
4. Bodo, E., et al. 2004. Vanilloid receptor-1 (VR1) is widely expressed on various epithelial and mesenchymal cell types of human skin. *J. Invest. Dermatol.* 123: 410-413.
5. Bodo, E., et al. 2005. A hot new twist to hair biology: involvement of vanilloid receptor-1 (VR1/TRPV1) signaling in human hair growth control. *Am. J. Pathol.* 166: 985-998.
6. Fausson-Pellegrini, M.S., et al. 2005. Distribution of the vanilloid (capsaicin) receptor type 1 in the human stomach. *Histochem. Cell Biol.* 124: 61-68.

STORAGE

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