

VR1 (H-150): sc-20813

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

- Caterina, M.J., et al. 1997. The capsaicin receptor: a heat-activated ion channel in the pain pathway. *Nature* 389: 816-824.
- Tominaga, M., et al. 1998. The cloned capsaicin receptor integrates multiple pain-producing stimuli. *Neuron* 21: 531-543.
- Sasamura, T. and Kuraishi, Y. 1999. Peripheral and central actions of capsaicin and VR1 receptor. *Jpn. J. Pharmacol.* 80: 275-280.
- Zygmunt, P.M., et al. 1999. Vanilloid receptors on sensory nerves mediate the vasodilator action of anandamide. *Nature* 400: 452-457.
- 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.
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- Karai, L.J., et al. 2004. Vanilloid receptor 1 regulates multiple calcium compartments and contributes to Ca²⁺-induced Ca²⁺ release in sensory neurons. *J. Biol. Chem.* 279: 16377-16387.
- 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 17p13.3.

SOURCE

VR1 (H-150) is a rabbit polyclonal antibody raised against amino acids 1-150 mapping at the N-terminus of VR1 (vanilloid receptor 1) 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.

APPLICATIONS

VR1 (H-150) is recommended for detection of VR1 of human origin by Western Blotting (starting dilution 1:200, 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 VR1 siRNA (h): sc-36826, VR1 shRNA Plasmid (h): sc-36826-SH and VR1 shRNA (h) Lentiviral Particles: sc-36826-V.

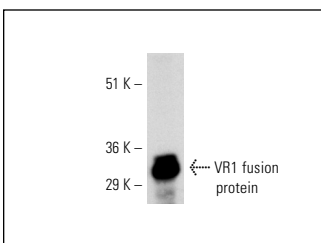
Molecular Weight of VR1: 100 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, THP-1 cell lysate: sc-2238 or SK-N-MC nuclear extract: sc-2154.

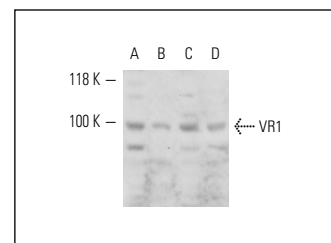
RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 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 goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

DATA



VR1 (H-150): sc-20813. Western blot analysis of human recombinant VR1 fusion protein.



VR1 (H-150): sc-20813. Western blot analysis of VR1 expression in NIH/3T3 (A), heat shock-treated NIH/3T3 (B), HeLa (C) and heat shock-treated HeLa (D) whole cell lysates.

SELECT PRODUCT CITATIONS

- Czifra, G., et al. 2009. Increased expressions of cannabinoid receptor-1 and transient receptor potential vanilloid-1 in human prostate carcinoma. *J. Cancer Res. Clin. Oncol.* 135: 507-514.

STORAGE

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

RESEARCH USE

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