SANTA CRUZ BIOTECHNOLOGY, INC.

VR1 (D-20): sc-12502

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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 Ca^{2+} 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

1. Caterina, M.J., et al. 1997. The capsaicin receptor: a heat-activated ion channel in the pain pathway. Nature 389: 816-824.
2. Cesare, P., et al. 1999. Ion channels gated by heat. Proc. Natl. Acad. Sci. USA 96: 7658-7663.
3. Sasamura, T. and Kuraishi, Y. 1999. Peripheral and central actions of capsaicin and VR1 receptor. J. Pharmacol. 80: 275-280.
4. Zygmunt, P.M., et al. 1999. Vanilloid receptors on sensory nerves mediate the vasodilator action of anandamide. Nature 400: 452-457.

CHROMOSOMAL LOCATION

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

SOURCE

VR1 (D-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-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-12502 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

VR1 (D-20) 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), 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).

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.

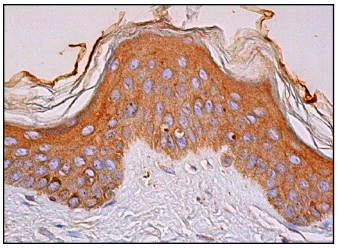
Molecular Weight of VR1: 100 kDa.

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 donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (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) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941. 3) Immunohistochemistry: use ImmunoCruz™: sc-2053 or ABC: sc-2023 goat IgG Staining Systems.

DATA



VR1 (D-20): sc-12502. Immunoperoxidase staining of formalin fixed, paraffin-embedded human skin tissue showing cytoplasmic staining of keratinocytes, Langerhans cells and melanocytes.

SELECT PRODUCT CITATIONS

1. Kechagias, S., et al. 2005. Expression of vanilloid receptor-1 in epithelial cells of human antral gastric mucosa. Scand. J. Gastroenterol. 40: 775-782.
2. Ericson, A., et al. 2009. The effects of capsaicin on gastrin secretion in isolated human antral glands: before and after ingestion of red chilli. Dig. Dis. Sci. 54: 491-498.
3. 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.
4. Marincsák, R., et al. 2009. Increased expression of TRPV1 in squamous cell carcinoma of the human tongue. Oral Dis. 15: 328-335.
5. Andersson, K.E., et al. 2010. The role of the transient receptor potential (TRP) superfamily of cation-selective channels in the management of the overactive bladder. BJU Int. 106: 1114-1127.
6. Rossi, F., et al. 2011. The endovanilloid/endocannabinoid system: a new potential target for osteoporosis therapy. Bone 48: 997-1007.

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.