

# ANKTM1 (C-4): sc-166469

## BACKGROUND

Transient receptor potential ion channels (TRPCs) are a superfamily of six transmembrane segment-spanning, gated cation channels. TRPC subtypes mediate store-operated  $\text{Ca}^{2+}$  entry, a process involving  $\text{Ca}^{2+}$  influx and replenishment of  $\text{Ca}^{2+}$  stores formerly emptied through the action of inositol 1,4,5-trisphosphate production and other  $\text{Ca}^{2+}$  mobilizing agents. TRP ion channels influence calcium-depletion induced calcium influx processes in response to chemo-, mechano- and osmoregulatory events. ANKTM1, also designated TRPA1, plays a role in both nociceptor and hair cell transduction. Activation of ANKTM1 occurs by perception of noxious cold ( $< 17^\circ \text{C}$ ), and pungent natural compounds, such as garlic, cinnamon oil and mustard oil. Inhibition of ANKTM1 impairs hair cell mechanotransduction. Blocking ANKTM1 may be a therapeutic target for treating cold hyperalgesia caused by inflammation and nerve damage.

## REFERENCES

1. Corey, D.P., et al. 2004. TRPA1 is a candidate for the mechanosensitive transduction channel of vertebrate hair cells. *Nature* 432: 723-730.
2. Tominaga, M. and Caterina, M.J. 2004. Thermosensation and pain. *J. Neurobiol.* 61: 3-12.
3. Bandell, M., et al. 2004. Noxious cold ion channel TRPA1 is activated by pungent compounds and bradykinin. *Neuron* 41: 849-857.
4. Obata, K., et al. 2005. TRPA1 induced in sensory neurons contributes to cold hyperalgesia after inflammation and nerve injury. *J. Clin. Invest.* 115: 2393-2401.
5. McKemy, D.D. 2005. How cold is it? TRPM8 and TRPA1 in the molecular logic of cold sensation. *Mol. Pain* 1: 16.
6. Nagata, K., et al. 2005. Nociceptor and hair cell transducer properties of TRPA1, a channel for pain and hearing. *J. Neurosci.* 25: 4052-4061.

## CHROMOSOMAL LOCATION

Genetic locus: TRPA1 (human) mapping to 8q13.3.

## SOURCE

ANKTM1 (C-4) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 1088-1112 at the C-terminus of ANKTM1 of human origin.

## PRODUCT

Each vial contains 200  $\mu\text{g}$  IgG $_1$  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-166469 P, (100  $\mu\text{g}$  peptide in 0.5 ml PBS containing  $< 0.1\%$  sodium azide and 0.2% stabilizer protein).

## STORAGE

Store at  $4^\circ \text{C}$ , \*\*DO NOT FREEZE\*\*. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

## APPLICATIONS

ANKTM1 (C-4) is recommended for detection of ANKTM1 of human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu\text{g}$  per 100-500  $\mu\text{g}$  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 ANKTM1 siRNA (h): sc-44780, ANKTM1 shRNA Plasmid (h): sc-44780-SH and ANKTM1 shRNA (h) Lentiviral Particles: sc-44780-V.

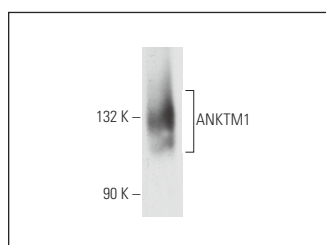
Molecular Weight of ANKTM1: 130 kDa.

Positive Controls: WI-38 whole cell lysate: sc-364260, IMR-32 cell lysate: sc-2409 or Hs68 cell lysate: sc-2230.

## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker<sup>TM</sup> Molecular Weight Standards: sc-2035, UltraCruz<sup>®</sup> 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-IgG $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz<sup>®</sup> Mounting Medium: sc-24941 or UltraCruz<sup>®</sup> Hard-set Mounting Medium: sc-359850.

## DATA



ANKTM1 (C-4): sc-166469. Western blot analysis of ANKTM1 expression in WI-38 whole cell lysate.

## SELECT PRODUCT CITATIONS

1. Osterloh, M., et al. 2016. Identification and functional characterization of TRPA1 in human myoblasts. *Pflugers Arch.* 468: 321-333.
2. Berrout, J., et al. 2017. TRPA1-FGFR2 binding event is a regulatory oncogenic driver modulated by miRNA-142-3p. *Nat. Commun.* 8: 947.
3. Manneck, D., et al. 2021. The TRPA1 agonist cinnamaldehyde induces the secretion of  $\text{HCO}_3^-$  by the porcine colon. *Int. J. Mol. Sci.* 22: 5198.

## RESEARCH USE

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