Code No.KM119

For research use only

Thermosensitive TRP Channel

Anti Mouse TRPV4 Polyclonal Antibody

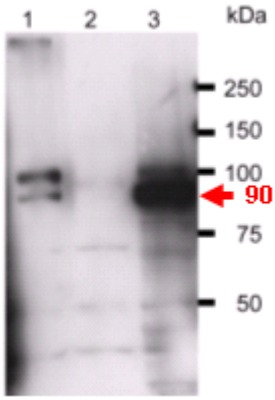
TRP (transient receptor potential) channels comprise a superfamily of non-selective cation channels with at least nine subfamilies. The variety of subfamilies corresponds to the differences in the activation mechanisms and functions.

TRPV4 (TRP vanilloid 4), first identified as an osmosensory ion channel, can also be activated by warm temperatures (> 27-35 degrees C). TRPV4 is expressed in a wide variety of tissues (sensory neurons, hypothalamus, skin, kidney, lung, inner ear). TRPV4 is a primary afferent transducer that plays a crucial role in neuropathic hyperalgesia for osmotic and mechanical stimuli, as well as in inflammatory mediator-induced hyperalgesia for osmotic stimuli. It functions as a Ca^{2+} entry channel and can be activated by a wide range of stimuli including physical (cell swelling, heat, mechanical stimulation) and chemical stimuli (endocannabinoids, arachidonic acid metabolites, and 4alpha-phorbol esters). Moreover, TRPV4 plays a major role in mechanical hyperalgesia and enhanced nociception to hypo-asmotic stimuli by Taxol.

Given its wide expression and the variety of activatory stimuli, TRPV4 is likely to play a number of physiological roles. Studies with TRPV4(-/-) mice suggest a role for the channel in the regulation of body osmolarity, mechanosensation, and temperature sensing.

This antibody will be very useful to research osmotic, mechanical stimuli, inflammatory reaction and thermosensitive response.

Package Size	25µg （100µL/vial）
Format	Rabbit polyclonal antibody 0.25mg/mL
Buffer	PBS [containing 2% Block Ace as a stabilizer, 0.1%Proclin as a bacteriostat]
Storage	Store below －20℃ Once thawed, store at 4℃. Repeated freeze-thaw cycles should be avoided.
Purification method	This antibody was established from the serum of a rabbit immunized with the partial peptide corresponding to amino acid 3-17 of mouse TRPV4, and purified by peptide affinity chromatography.
Working dilution	For Western blotting： 0.25 µg/ml



Western blotting

Lane 1: choroid plexus (Wild type mouse)
Lane 2: choroid plexus (TRPV4 knockout mouse)
Lane 3: rat TRPV4 overexpressed in HEK293 cells

Preparation of antibodies and instruction
Dr. Makoto Tominaga at Section of Cell Signaling,
Okazaki Institute for Integrative Bioscience,
National Institutes of Natural Sciences

Code No.KM119

Thermosensitive TRP Channel
Anti Mouse TRPV4 Polyclonal Antibody

【Reference】

1 Güler AD. et al:
Heat-evoked activation of the ion channel, TRPV4.
J Neurosci. 2002 Aug 1;22(15):6408-14.

2 Chung MK. et al:
Warm temperatures activate TRPV4 in mouse 308 keratinocytes
J Biol Chem. 2003 Aug 22;278(34):32037-46.

3 Watanabe H. et al:
Anandamide and arachidonic acid use epoxyeicosatrienoic acids to activate TRPV4 channels.
Nature. 2003 Jul 24;424(6947):434-8.

4 Alessandri-Haber N. et al:
Transient receptor potential vanilloid 4 is essential in chemotherapy-induced neuropathic pain in the rat.
J Neurosci. 2004 May 5;24(18):4444-52. Erratum in: J Neurosci. 2004 Jun ;24(23):5457.

5 Mizuno A. et al:
Impaired osmotic sensation in mice lacking TRPV4.
Am J Physiol Cell Physiol. 2003 Jul;285(1):C96-101.

6 Shibasaki K. et al:
Effects of body temperature on neural activity in the hippocampus: regulation of resting membrane potentials by transient receptor potential vanilloid 4.
J Neurosci. 2007 Feb 14;27(7):1566-75. *

*: Application Reference

< Distributed by >

DF Kasumigaseki Place, 3-6-7, Kasumigaseki, Chiyoda-ku
Tokyo 100-0013 Japan
URL: http://www.sceti.co.jp/export/ e-mail: exp-pet@sceti.co.jp

Manufacturer

Trans Genic Inc.

7-1-14 Minatojimaminami-machi, Chuo-ku, Kobe, Japan 650-0047
Telephone: +81-78-306-0295 FAX:+81-78-306-0296
URL:http://www.transgenic.co.jp techstaff@transgenic.co.jp