10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.875.1999

TRESK Antibody

Catalog # ASC11043

Product Information

Application	WB, IF, E, IHC-P
Primary Accession	Q7Z418
Other Accession	NP_862823, 32469495
Reactivity	Human, Mouse, Rat
Host	Rabbit
Clonality	Polyclonal
Isotype	IgG
Calculated MW	43671
Concentration (mg/ml)	1 mg/mL
Conjugate	Unconjugated
Application Notes	TRESK antibody can be used for detection of TRESK by Western blot at 1 - 2 g/mL. Antibody can also be used for immunohistochemistry starting at 5 g/mL. For immunofluorescence start at 20 g/mL.

Additional Information

Gene ID	338567
Other Names	Potassium channel subfamily K member 18, TWIK-related individual potassium channel, TWIK-related spinal cord potassium channel, KCNK18, TRESK, TRIK
Target/Specificity	KCNK18;
Reconstitution & Storage	TRESK antibody can be stored at 4℃ for three months and -20℃, stable for up to one year. As with all antibodies care should be taken to avoid repeated freeze thaw cycles. Antibodies should not be exposed to prolonged high temperatures.
Precautions	TRESK Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	KCNK18 {ECO:0000303|PubMed:22355750, ECO:0000312|HGNC:HGNC:19439}
Function	K(+) channel that conducts outward and inward rectifying currents at depolarized and hyperpolarized membrane potentials, respectively. The outward rectifying currents are voltage-dependent, coupled to K(+) electrochemical gradient across the membrane, whereas the inward currents can be induced in response to activation of Ca(2+)- mobilizing receptors (PubMed:12754259, PubMed:15562060, PubMed:20871611, PubMed:22355750, PubMed:26919430, PubMed:30573346). Homo- and

	heterodimerizes to form functional channels with distinct regulatory and gating properties. In trigeminal ganglia sensory neurons, the heterodimers of KCNK18/TRESK and KCNK2/TREK-1 or KCNK10/TREK-2 inhibit neuronal firing and neurogenic inflammation by stabilizing the resting membrane potential at K(+) equilibrium potential as well as by regulating the threshold of action potentials and the spike frequency (By similarity). In thymocytes, conducts K(+) currents upon T cell receptor (TCR) signaling leading to sustained Ca(2+) influx and NF-kappa-B activation, FOXP3 transcription and positive selection of regulatory T cell (Treg) progenitor subsets (PubMed:34702947). Appears to mediate the analgesics effects of hydroxy-alpha-sanshool, a metabolite naturally present in Schezuan pepper and other Xanthoxylum plants (By similarity).
Cellular Location	Cell membrane; Multi-pass membrane protein
Tissue Location	Expressed in dorsal root ganglion and trigeminal ganglion neurons. Detected at low levels in spinal cord. Expressed in regulatory T cells (at protein level).

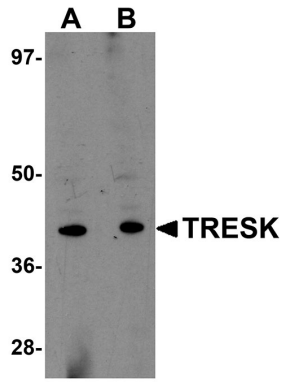
Background

TRESK Antibody: TRESK (TWIK-related spinal cord K+ channel) is a two-pore domain K+ channel that induces outward rectification and functions as a background K+ channel that is abundantly expressed in the spinal cord, thymus, spleen, and leukemic T-lymphocytes. TRESK is activated by increased cytoplasmic calcium concentration through calcineurin as well as by acetylcholine and histamine. It has been suggested that TRESK is linked to acute and chronic pain by activation of calcineurin. Other studies indicate that TRESK may play a role in the regulation of T-cell function and could be an excellent target to treat T-cell originated immune dysfunction.

References

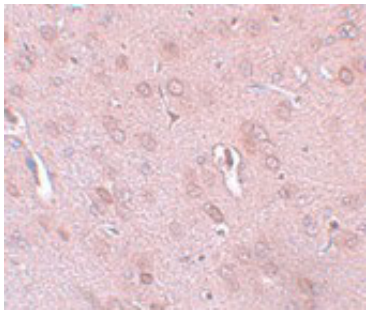
Sano Y, Inamura K, Miyake A, et al. A novel two-pore K+ channel, TRESK, is localized in the spinal cord. J. Biol. Chem.2003; 278:27406-12.
Han J and Kang D. TRESK channel as a potential target to treat T-cell mediated immune dysfunction. Biochem. Biophys. Res. Comm.2009; 390:1102-5.
Czirjak G, Toth ZE, and Enyedi P. The two-pore domain K+ channel, TRESK, is activated by the cytoplasmic calcium signal through calcineurin. J. Biol. Chem.2004; 279:18550-8.
Huang DY, Yu BW, and Fan QW. Roles of TRESK, a novel two-pore domain K+ channel, in pain pathway and general anesthesia. Neurosci. Bull.2008; 24:166-72.

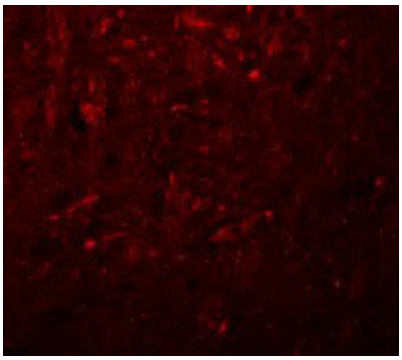
Images



Western blot analysis of TRESK in rat brain tissue lysate with TRESK antibody at (A) 1 and (B) 2 µg/mL.

Immunohistochemistry of TRESK in rat brain tissue with TRESK antibody at 5 µg/mL.





Immunofluorescence of TRESK in Rat Brain cells with TRESK antibody at 20 µg/mL.

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