



## TWIK-1 (H-20): sc-11483

### BACKGROUND

K<sup>+</sup> channels are divided into three subclasses, reflecting the number of transmembrane segments (TMS), which are designated 6TMS, 4TMS, and 2TMS. Members of the 4TMS class contain two distinct pore regions, and include TASK, TREK, TRAAK, and TWIK. TWIK-1 mRNA is expressed abundantly in brain and at lower levels in lung, kidney, and skeletal muscle. TWIK-2 shares low sequence homology with other mammalian family group members, and only 34% homology with TWIK-1. Human TWIK-2 is expressed in pancreas, placenta and heart, while mouse TWIK-2 is expressed in liver. TWIK-2 is inhibited by intracellular, but not extracellular, acidification.

### REFERENCES

1. Lesage, F., et al. 1996. TWIK-1, a ubiquitous human weakly inward rectifying K<sup>+</sup> channel with a novel structure. *EMBO J.* 15: 1004-1011.
2. Fink, M., et al. 1996. Cloning, functional expression and brain localization of a novel unconventional outward rectifier K<sup>+</sup> channel. *EMBO J.* 15: 6854-6862.
3. Duprat, F., et al. 1997. TASK, a human background K<sup>+</sup> channel to sense external pH variations near physiological pH. *EMBO J.* 16: 5464-5471.
4. Lesage, F., et al. 1997. The structure, function and distribution of the mouse TWIK-1 K<sup>+</sup> channel. *FEBS Lett.* 402: 28-32.
5. Maingret, F., et al. 1999. TRAAK is a mammalian neuronal mechano-gated K<sup>+</sup> channel. *J. Biol. Chem.* 274: 1381-1387.
6. Pountney, D.J., et al. 1999. Identification and cloning of TWIK-originated similarity sequence (TOSS): a novel human 2-pore K<sup>+</sup> channel principal subunit. *FEBS Lett.* 450: 191-196.
7. Chavez, R.A., et al. 1999. TWIK-2, a new weak inward rectifying member of the tandem pore domain potassium channel family. *J. Biol. Chem.* 274: 24440.

### CHROMOSOMAL LOCATION

Genetic locus: Kcnk1 (mouse) mapping to 8 E2.

### SOURCE

TWIK-1 (H-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of TWIK-1 of mouse 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-11483 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

### STORAGE

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

### APPLICATIONS

TWIK-1 (H-20) is recommended for detection of TWIK-1 of mouse and rat 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for TWIK-1 siRNA (m): sc-42350, TWIK-1 shRNA Plasmid (m): sc-42350-SH and TWIK-1 shRNA (m) Lentiviral Particles: sc-42350-V.

Molecular Weight of TWIK-1: 40/81 kDa.

Positive Controls: mouse brain extract: sc-2253.

### 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.

### SELECT PRODUCT CITATIONS

1. Xiao, Z., et al. 2009. Noradrenergic depression of neuronal excitability in the entorhinal cortex via activation of TREK-2 K<sup>+</sup> channels. *J. Biol. Chem.* 284: 10980-10991.
2. Deng, P.Y., et al. 2009. GABA<sub>B</sub> receptor activation inhibits neuronal excitability and spatial learning in the entorhinal cortex by activating TREK-2 K<sup>+</sup> channels. *Neuron* 63: 230-243.

### RESEARCH USE

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

### PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.