SANTA CRUZ BIOTECHNOLOGY, INC.

CNG-4 (T-13): sc-167508

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Cyclic nucleotide-gated (CNG) cation channels are heteromeric complexes made up of principal α and modulatory β subunits. The α subunits consist of CNG1-3 and form functional cation channels by themselves. The β subunits consist of CNG4-6 and, unlike the α subunits, do not form functional channels, but rather modify the properties of channels. CNG channels are essential components of olfactory and visual transduction. In olfactory neurons, CNG2, CNG4.3 and CNG5 form Ca^{2+} permeable channels, which open and depolarize the cell in response to cAMP. In rod photoreceptors, CNG1 and CNG4.1 combine to form Ca ion permeable channels, which give rise to a current in response to cGMP. CNG3 and CNG6 are expressed in cone receptors and may combine to form a native cGMP-activated channel. CNG channels have been implicated in other areas. CNG1 is also expressed in medium-sized and small-sized arteries, suggesting a role for CNG in the regulation of arterial blood pressure and of blood supply to different regions. CNG1, CNG4.1 and CNG4.2 have been detected in the rat pineal gland. CNG2, CNG4.3 and CNG5 are present in GT1 cell lines and may play a role in the secretion of gonadotropin-releasing hormone.

REFERENCES

1. Sautter, A., et al. 1997. Molecular cloning of cyclic nucleotide-gated cation channel subunits from rat pineal gland. Brain Res. Mol. Brain Res. 48: 171-175.
2. Sautter, A., et al. 1998. An isoform of the rod photoreceptor cyclic necleotide-gated channel β subunit expressed in olfactory neurons. Proc. Natl. Acad. Sci. USA 95: 4696-4701.
3. Biel, M. et al. 1999. Selective loss of cone function in mice lacking the cyclic nucleotide-gated channel CNG3. Proc. Natl. Acad. Sci. USA 96: 7553-7557.
4. Yao, X., et al. 1999. Rod-type cyclic nucleotide-gated cation channel is expressed in vascular endothelium and vascular smooth muscle cells. Cardiovasc. Res. 41: 282-290.
5. Gerstner, A., et al. 2000. Molecular cloning and functional characterization of a new modulatory cyclic nucleotide-gated channel subunit from mouse retina. J. Neurosci. 20: 1324-1332.
6. Vitalis, E.A., et al. 2000. Role of the cAMP signaling pathway in the regulation of gonadotropin-releasing hormone secretion in GT1 cells. Proc. Natl. Acad. Sci. USA 97: 1861-1866.

CHROMOSOMAL LOCATION

Genetic locus: CNGA4 (human) mapping to 11p15.4; Cnga4 (mouse) mapping to 7 E3.

SOURCE

CNG-4 (T-13) is an affinity purified goat polyclonal antibody raised against a peptide mapping within a C-terminal cytoplasmic domain of CNG-4 of human origin.

RESEARCH USE

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

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-167508 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

CNG-4 (T-13) is recommended for detection of CNG-4 of mouse, rat and 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000); non cross-reactive with other CNG family members.

CNG-4 (T-13) is also recommended for detection of CNG-4 in additional species, including bovine and porcine.

Suitable for use as control antibody for CNG-4 siRNA (h): sc-96827, CNG-4 siRNA (m): sc-142428, CNG-4 shRNA Plasmid (h): sc-96827-SH, CNG-4 shRNA Plasmid (m): sc-142428-SH, CNG-4 shRNA (h) Lentiviral Particles: sc-96827-V and CNG-4 shRNA (m) Lentiviral Particles: sc-142428-V.

Molecular Weight of CNG-4: 66 kDa.

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.

STORAGE

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

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.