

CNG-1 (C-20): sc-13693

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, CNG-2, CNG4-3 and CNG-5 form Ca^{2+} permeable channels, which open and depolarize the cell in response to cAMP. In rod photoreceptors, CNG-1 and CNG4-1 combine to form Ca ion permeable channels, which give rise to a current in response to cGMP. CNG-3 and CNG-6 are expressed in cone receptors and may combine to form a native cGMP-activated channel. CNG channels have been implicated in other areas. CNG-1 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. CNG-1, CNG4-1 and CNG4-2 have been detected in the rat pineal gland. CNG-2, CNG4-3 and CNG-5 are present in GT1 cell lines and may play a role in the secretion of gonadotropin-releasing hormone.

REFERENCES

1. Sautter, A., Biel, M., and Hofmann, F. 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., Zong, X., Hofmann, F., and Biel, M. 1998. An isoform of the rod photoreceptor cyclic nucleotide-gated channel beta subunit expressed in olfactory neurons. *Proc. Natl. Acad. Sci. USA* 95: 4696-4701.
3. Biel, M., Seeliger, M., Pfeifer, A., Kohler, K., Gerstner, A., Ludwig, A., Jaissle, G., Fauser, S., Zrenner, E., and Hofmann, F. 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., Leung, P.S., Kwan, H.Y., Wong, T.P., and Fong, M.W. 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., Zong, X., Hofmann, F., and Biel, M. 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., Costantin, J.L., Tsai, P., Sakakibara, H., Paruthiyil, S., Iiri, T., Martini, J., Taga, M., Choi, A.L.H., Charles, A.C., and Weiner, R.I. 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.

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.

CHROMOSOMAL LOCATION

Genetic locus: CNGA1 (human) mapping to 4p12.

SOURCE

CNG-1 (C-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus of CNG-1 of human 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-13693 P, (100 μg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

CNG-1 (C-20) is recommended for detection of CNG-1 of 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).

CNG-1 (C-20) is also recommended for detection of CNG-1 in additional species, including bovine and porcine.

Suitable for use as control antibody for CNG-1 siRNA (h): sc-42391, CNG-1 shRNA Plasmid (h): sc-42391-SH and CNG-1 shRNA (h) Lentiviral Particles: sc-42391-V.

Molecular Weight of CNG-1: 30 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.

RESEARCH USE

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