SANTA CRUZ BIOTECHNOLOGY, INC.

CNG-β3 (H-3): sc-390088

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. formed by CNG1-3. CNG channels are essential components of olfactory and visual transduction. CNG proteins are present in cone and rod photoreceptors and in the pineal gland, and they contribute to modulating arterial blood pressure. CNG6, also designated cyclic-nucleotide-gated cation channel β3 (CNG-β3), is an integral membrane protein that can form a heterooligomeric complex with CNG-3. CNG-β3 is activated by cGMP and this activation leads to the depolarization of rod photoreceptors as a result of cation channel being opened. CNG-β3 is expressed in a small group of retinal photoreceptor cells and in testis. Mutations in the gene encoding for CNG-β3, can cause achromatopsia, an autosomal recessively inherited disease characterized by low visual acuity, photophobia, a lack of color discrimination, and nystagmus.

REFERENCES

1. 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.
2. 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.
3. Peng, C., et al. 2003. Functionally important calmodulin-binding sites in both NH_2- and COOH-terminal regions of the cone photoreceptor cyclic nucleotide-gated channel CNGB3 subunit. J. Biol. Chem. 278: 24617-24623.
4. Johnson, S., et al. 2004. Achromatopsia caused by novel mutations in both CNGA3 and CNGB3. J. Med. Genet. 41: e20.

CHROMOSOMAL LOCATION

Genetic locus: CNGB3 (human) mapping to 8q21.3; Cngb3 (mouse) mapping to 4 A3.

SOURCE

CNG-β3 (H-3) is a mouse monoclonal antibody raised against amino acids 1-224 mapping at the N-terminus of CNG-β3 of mouse origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

CNG-β3 (H-3) is available conjugated to agarose (sc-390088 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-390088 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-390088 PE), fluorescein (sc-390088 FITC), Alexa Fluor® 488 (sc-390088 AF488), Alexa Fluor® 546 (sc-390088 AF546), Alexa Fluor® 594 (sc-390088 AF594) or Alexa Fluor® 647 (sc-390088 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-390088 AF680) or Alexa Fluor® 790 (sc-390088 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

CNG-β3 (H-3) is recommended for detection of CNG-β3 of mouse and rat origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], 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 CNG-β3 siRNA (h): sc-45563, CNG-β3 siRNA (m): sc-45564, CNG-β3 shRNA Plasmid (h): sc-45563-SH, CNG-β3 shRNA Plasmid (m): sc-45564-SH, CNG-β3 shRNA (h) Lentiviral Particles: sc-45563-V and CNG-β3 shRNA (m) Lentiviral Particles: sc-45564-V.

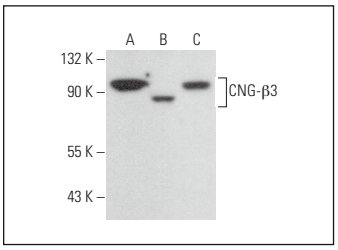
Molecular Weight of CNG-β3: 92 kDa.

Positive Controls: F9 cell lysate: sc-2245, Neuro-2A whole cell lysate: sc-364185 or AT3B-1 whole cell lysate: sc-364372.

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



CNG-β3 (H-3): sc-390088. Western blot analysis of CNG-β3 expression in F9 (**A**), AT3B-1 (**B**) and Neuro-2A (**C**) whole cell lysates.

STORAGE

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

RESEARCH USE

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

PROTOCOLS

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