SANTA CRUZ BIOTECHNOLOGY, INC.

CNG-β3 (C-4): sc-398211

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.

CHROMOSOMAL LOCATION

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

SOURCE

CNG-β3 (C-4) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 78-97 within an N-terminal cytoplasmic domain of CNG-β3 of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

CNG-β3 (C-4) is available conjugated to agarose (sc-398211 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-398211 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-398211 PE), fluorescein (sc-398211 FITC), Alexa Fluor® 488 (sc-398211 AF488), Alexa Fluor® 546 (sc-398211 AF546), Alexa Fluor® 594 (sc-398211 AF594) or Alexa Fluor® 647 (sc-398211 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-398211 AF680) or Alexa Fluor® 790 (sc-398211 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-398211 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

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 for detailed protocols and support products.

APPLICATIONS

CNG-β3 (C-4) is recommended for detection of CNG-β3 of mouse, rat and human 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.

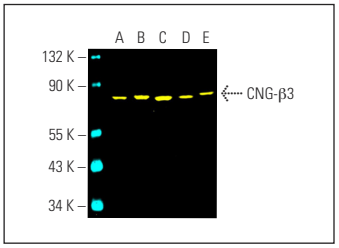
Molecular Weight of CNG-β3: 92 kDa.

Positive Controls: ARPE-19 whole cell lysate: sc-364357, T98G cell lysate: sc-2294 or H4 cell lysate: sc-2408.

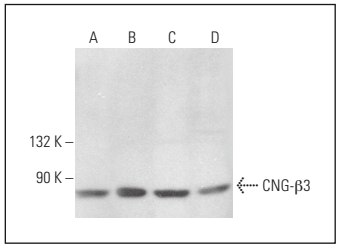
RECOMMENDED SUPPORT REAGENTS

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 (C-4) Alexa Fluor® 488: sc-398211 AF488. Direct fluorescent western blot analysis of CNG-β3 expression in ARPE-19 (**A**), H4 (**B**), EOC 20 (**C**), Neuro-2A (**D**) and T98G (**E**) whole cell lysates. Blocked with UltraCruz® Blocking Reagent: sc-516214. Cruz Marker™ Molecular Weight Standards detected with Cruz Marker™ MW Tag-Alexa Fluor® 647: sc-516791.



CNG-β3 (C-4): sc-398211. Western blot analysis of CNG-β3 expression in ARPE-19 (**A**), EOC 20 (**B**), Neuro-2A (**C**) and Y79 (**D**) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Saha, A., et al. 2022. Cone photoreceptors in human stem cell-derived retinal organoids demonstrate intrinsic light responses that mimic those of primate fovea. Cell Stem Cell 29: 460-471.e3.

RESEARCH USE

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