SANTA CRUZ BIOTECHNOLOGY, INC.

PCP-2 (F-3): sc-137064

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Purkinje cells are densely branching neurons characteristic of the cerebellar cortex. Purkinje cell protein-2 (PCP-2 or L7) is a G protein regulator abundant in Purkinje cells and retinal bipolar neurons. PCP-2 belongs to a family of proteins containing a GoLoco or GPR (G protein regulatory) motif named for the $G_{i/o}$ interacting protein Loco, the *Drosophila* RGS12 homologue. PCP-2 protein interacts with $G_{\alpha\ i/o}$ family of G proteins to inhibit GDP release. This indicates that the colocalization and association of $G_{\alpha\ i/o}$ and PCP-2 in cerebellum may play a functional role in regions of synaptic activity, as well as neural differentiation. The Purkinje type calcium channels may be physiological effectors of PCP-2 because they are the major voltage-dependent channels that modulate cell output and they are regulated by $G_{i/o}$ proteins. PCP-2 is only detected in higher vertebrates, suggesting that it may be a marker of more recent evolutionary development of cerebellar Purkinje cells.

CHROMOSOMAL LOCATION

Genetic locus: PCP2 (human) mapping to 19p13.2; Pcp2 (mouse) mapping to 8 A1.1.

SOURCE

PCP-2 (F-3) is a mouse monoclonal antibody raised against amino acids 1-60 mapping at the N-terminus of PCP-2 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.

PCP-2 (F-3) is available conjugated to agarose (sc-137064 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-137064 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-137064 PE), fluorescein (sc-137064 FITC), Alexa Fluor® 488 (sc-137064 AF488), Alexa Fluor® 546 (sc-137064 AF546), Alexa Fluor® 594 (sc-137064 AF594) or Alexa Fluor® 647 (sc-137064 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-137064 AF680) or Alexa Fluor® 790 (sc-137064 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

PCP-2 (F-3) is recommended for detection of PCP-2 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), immunohistochemistry (including paraffin-embedded sections) (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 PCP-2 siRNA (h): sc-61307, PCP-2 siRNA (m): sc-61308, PCP-2 shRNA Plasmid (h): sc-61307-SH, PCP-2 shRNA Plasmid (m): sc-61308-SH, PCP-2 shRNA (h) Lentiviral Particles: sc-61307-V and PCP-2 shRNA (m) Lentiviral Particles: sc-61308-V.

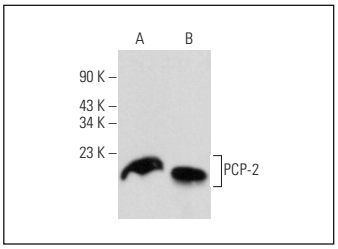
Molecular Weight of PCP-2: 16 kDa.

Positive Controls: rat cerebellum extract: sc-2398.

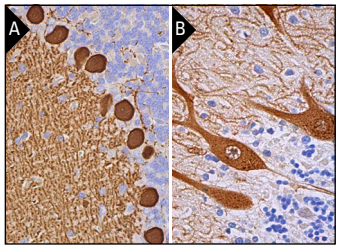
STORAGE

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

DATA



PCP-2 (F-3): sc-137064. Western blot analysis of PCP-2 expression in human cerebellum (**A**) and rat cerebellum (**B**) tissue extracts.



PCP-2 (F-3): sc-137064. Immunoperoxidase staining of formalin fixed, paraffin-embedded mouse cerebellum tissue showing cytoplasmic, membrane and nuclear staining of Purkinje cells and neuropil staining in granular layer (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human cerebellum tissue showing cytoplasmic and nuclear staining of Purkinje cells and neuropil staining in granular layer (**B**).

SELECT PRODUCT CITATIONS

1. Dansithong, W., et al. 2015. Ataxin-2 regulates RGS8 translation in a new BAC-SCA2 transgenic mouse model. PLoS Genet. 11: e1005182.
2. Scoles, D.R., et al. 2017. Antisense oligonucleotide therapy for spinocerebellar ataxia type 2. Nature 544: 362-366.
3. Mao, H., et al. 2018. Quantitative comparison of vesicular glutamate transporters in rat deep cerebellar nuclei. Neuroscience 376: 152-161.
4. Zhang, W., et al. 2018. SIRT6 deficiency results in developmental retardation in cynomolgus monkeys. Nature 560: 661-665.
5. Paul, S., et al. 2018. Staufen1 links RNA stress granules and autophagy in a model of neurodegeneration. Nat. Commun. 9: 3648.
6. He, F., et al. 2019. Critical role for phosphatidylinositol-3 kinase Vps34/PIK3C3 in ON-bipolar cells. Invest. Ophthalmol. Vis. Sci. 60: 2861-2874.
7. Mao, H., et al. 2019. Quantitative organization of the excitatory synapses of the primate cerebellar nuclei: further evidence for a specialized architecture underlying the primate cerebellum. Brain Struct. Funct. 224: 1987-1998.
8. Ast, T., et al. 2019. Hypoxia rescues frataxin loss by restoring iron sulfur cluster biogenesis. Cell 177: 1507-1521.e16.
9. Murenu, E., et al. 2021. A universal protocol for isolating retinal ON bipolar cells across species via fluorescence-activated cell sorting. Mol. Ther. Methods Clin. Dev. 20: 587-600.
10. Choi, J.M., et al. 2021. Cell type-specific knockout with Gli1-mediated Cre recombination in the developing cerebellum. Exp. Neurobiol. 30: 203-212.
11. Wang, D., et al. 2021. High-resolution light-field microscopy with patterned illumination. Biomed. Opt. Express 12: 3887-3901.

RESEARCH USE

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