PCP-2 (m2): 293T Lysate: sc-122438



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 co-localization 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.

REFERENCES

- 1. Redd, K.J., Oberdick, J., McCoy, J., Denker, B.M. and Luo, Y. 2002. Association and co-localization of G protein α -subunits and Purkinje cell protein-2 (PCP-2) in mammalian cerebellum. J. Neurosci. Res. 70: 631-637.
- 2. Zhang, X., Zhang, H. and Oberdick, J. 2002. Conservation of the developmentally regulated dendritic localization of a Purkinje cell-specific mRNA that encodes a G protein modulator: comparison of rodent and human L7/ PCP-2 gene structure and expression. Brain Res. Mol. Brain Res. 105: 1-10.
- Kinoshita-Kawada, M., Oberdick, J. and Xi Zhu, M. 2004. A Purkinje cell-specific GoLoco domain protein, L7/PCP-2, modulates receptor-mediated inhibition of Cav2.1 Ca²⁺ channels in a dose-dependent manner. Brain Res. Mol. Brain Res. 132: 73-86.
- Rong, Y., Wang, T. and Morgan, J.I. 2004. Identification of candidate Purkinje cell-specific markers by gene expression profiling in wild-type and pcd(3J) mice. Brain Res. Mol. Brain Res. 132: 128-145.
- Goswami, J., Martin, L.A., Goldowitz, D., Beitz, A.J. and Feddersen, R.M. 2005. Enhanced Purkinje cell survival but compromised cerebellar function in targeted anti-apoptotic protein transgenic mice. Mol. Cell. Neurosci. 29: 202-221.
- 6. Guan, J., Luo, Y. and Denker, B.M. 2005. Purkinje cell protein-2 (PCP-2) stimulates differentiation in PC-12 cells by $G_{\beta\gamma}$ -mediated activation of Ras and p38 MAPK. Biochem. J. 392: 389-397.
- Saito, H., Tsumura, H., Otake, S., Nishida, A., Furukawa, T. and Suzuki, N. 2005. L7/PCP-2-specific expression of Cre recombinase using knock-in approach. Biochem. Biophys. Res. Commun. 331: 1216-1221.
- 8. Simons, M.J. and Pellionisz, A.J. 2006. Genomics, morphogenesis and biophysics: triangulation of Purkinje cell development. Cerebellum 5: 27-35.
- Wang, T., Parris, J., Li, L. and Morgan, J.I. 2006. The carboxypeptidase-like substrate-binding site in Nna1 is essential for the rescue of the Purkinje cell degeneration (pcd) phenotype. Mol. Cell. Neurosci. 33: 200-213.

STORAGE

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. Non-hazardous. No MSDS required.

CHROMOSOMAL LOCATION

Genetic locus: Pcp2 (mouse) mapping to 8 A1.1.

PRODUCT

PCP-2 (m2): 293T Lysate represents a lysate of mouse PCP-2 transfected 293T cells and is provided as 100 µg protein in 200 µl SDS-PAGE buffer.

APPLICATIONS

PCP-2 (m2): 293T Lysate is suitable as a Western Blotting positive control for mouse reactive PCP-2 antibodies. Recommended use: $10-20~\mu$ l per lane.

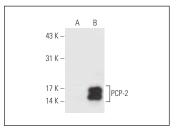
Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

PCP-2 (F-3): sc-137064 is recommended as a positive control antibody for Western Blot analysis of enhanced mouse PCP-2 expression in PCP-2 transfected 293T cells (starting dilution 1:100, dilution range 1:100-1:1,000).

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-lgG κ BP-HRP: sc-516102 or m-lgG κ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz MarkerTM Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048.

DATA



PCP-2 (F-3): sc-137064. Western blot analysis of PCP-2 expression in non-transfected: sc-117752 (**A**) and mouse PCP-2 transfected: sc-122438 (**B**) 293T whole reall lysates

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.