SANTA CRUZ BIOTECHNOLOGY, INC.

PRG-3 (T-14): sc-165290

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

PRG-3 (plasticity-related gene 3), also known as PRG3 or LPPR1 (lipid phosphate phosphatase-related protein type 1), is a 325 amino acid multi-pass membrane protein that belongs to the PA-phosphatase related phosphoesterase family. Strongly expressed in brain, PRG-3 exhibits dynamic expression regulation during brain development and neuronal excitation. In mature brain, PRG-3 is strongly expressed in hippocampus and cerebellum. PRG-3 is known to induce both filopodia formation and neurite growth. Similar to other family members, PRG-3 mediates lipid phosphate phosphatase activity in neurons and is involved in neuronal plasticity. Contrary to other family members, PRG-3 does not function by way of enzymatic phospholipid degradation. PRG-3 also functions as a key enzyme involved in the metabolism of phospholipids, such as LPA and S1P, in the nervous system. The gene that encodes PRG-3 maps to human chromosome 9q31.1.

REFERENCES

1. Savaskan, N.E., et al. 2004. Molecular cloning and expression regulation of PRG-3, a new member of the plasticity-related gene family. Eur. J. Neurosci. 19: 212-220.
2. Brindley, D.N. 2004. Lipid phosphate phosphatases and related proteins: signaling functions in development, cell division, and cancer. J. Cell. Biochem. 92: 900-912.
3. Wang, W.Z., et al. 2005. Dynamic pattern of mRNA expression of plasticity-related gene-3 (PRG-3) in the mouse cerebral cortex during development. Brain Res. Bull. 66: 454-460.
4. Bräuer, A.U., et al. 2008. Plasticity-related genes (PRGs/LRPs): a brain-specific class of lysophospholipid-modifying proteins. Biochim. Biophys. Acta 1781: 595-600.
5. Trimbuch, T., et al. 2009. Synaptic PRG-1 modulates excitatory transmission via lipid phosphate-mediated signaling. Cell 138: 1222-1235.
6. Broggini, T., et al. 2010. Plasticity-related gene 5 (PRG5) induces filopodia and neurite growth and impedes lysophosphatidic acid- and nogo-A-mediated axonal retraction. Mol. Biol. Cell 21: 521-537.
7. Lyons, D.M., et al. 2010. Stress coping stimulates hippocampal neurogenesis in adult monkeys. Proc. Natl. Acad. Sci. USA 107: 14823-14827.

CHROMOSOMAL LOCATION

Genetic locus: LPPR1 (human) mapping to 9q31.1; E130309F12Rik (mouse) mapping to 4 B1.

SOURCE

PRG-3 (T-14) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of PRG-3 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-165290 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

PRG-3 (T-14) is recommended for detection of PRG-3 of mouse, rat and 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).

PRG-3 (T-14) is also recommended for detection of PRG-3 in additional species, including equine, canine, bovine, porcine and avian.

Suitable for use as control antibody for PRG-3 siRNA (h): sc-92885, PRG-3 siRNA (m): sc-152461, PRG-3 shRNA Plasmid (h): sc-92885-SH, PRG-3 shRNA Plasmid (m): sc-152461-SH, PRG-3 shRNA (h) Lentiviral Particles: sc-92885-V and PRG-3 shRNA (m) Lentiviral Particles: sc-152461-V.

Molecular Weight of PRG-3: 36 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.

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 or our catalog for detailed protocols and support products.