SANTA CRUZ BIOTECHNOLOGY, INC.

PLP (plpc 1): sc-58571

BACKGROUND

PLP (myelin proteolipid protein or lipophilin) is a major constituent of myelin. The two isoforms of the myelin proteolipid protein, PLP and DM20, are very hydrophobic integral membrane proteins that account for about half of the protein content of adult CNS myelin. A mutation in the gene which encodes PLP is linked to Pelizaeus-Merzbacher disease (PMD), a chronic infantile type of diffuse cerebral sclerosis. The gene which encodes PLP maps to human chromosome Xq22.2. The glycoprotein zero (also designated P-zero or myelin peripheral protein) is the major structural protein of peripheral myelin, accounting for more than 50% of the protein present in the sheath of peripheral nerves. Zero is an integral membrane glycoprotein whose expression is restricted to Schwann cells. The gene which encodes zero maps to human chromosome 1q22. PMP22 (peripheral myelin protein 22) is a growth-regulated membrane protein which is expressed by Schwann cells and is localized mainly in compact peripheral nervous system myelin. The gene which encodes PMP22 maps to human chromosome 17p11.2.

REFERENCES

1. Ford, F.R. 1960. Diseases of the Nervous Aystem in Infancy, Childhood and Adolescence, 4th ed. Springfield, IL: Charles C. Thomas Publisher, 831-833.
2. Willard, H.F. and Riordan, J.R. 1985. Assignment of the gene for myelin proteolipid protein to the X chromosome: implications for X-linked myelin disorders. Science 230: 940-942.
3. Mattei, M.G., et al. 1986. The gene encoding for the major brain proteolipid (PLP) maps on the q22 band of the human X chromosome. Hum. Genet. 72: 352-353.
4. Patel, P.I., et al. 1992. The gene for the peripheral myelin protein PMP22 is a candidate for Charcot-Marie-Tooth disease type 1A. Nat. Genet. 1: 159-165.
5. Suter, U., et al. 1992. A leucine-to-proline mutation in the putative first transmembrane domain of the 22 kDa peripheral myelin protein in the trembler-J mouse. Proc. Natl. Acad. Sci. USA 89: 4382-4386.
6. Hayasaka, K., et al. 1993. Structure and chromosomal localization of the gene encoding the human myelin protein zero (MPZ). Genomics 17: 755-758.
7. Hodes, M.E., et al. 1995. Girl with signs of Pelizaeus-Merzbacher disease heterozygous for a mutation in exon 2 of the proteolipid protein gene. Am. J. Med. Genet. 55: 397-401.

CHROMOSOMAL LOCATION

Genetic locus: PLP1 (human) mapping to Xq22.2; Plp1 (mouse) mapping to X F1.

SOURCE

PLP (plpc 1) is a mouse monoclonal antibody raised against a C-terminal peptide sequence spanning amino acids 272-277 of PLP of rat origin.

PRODUCT

Each vial contains 50 µg IgG_{2a} in 500 µl of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

PLP (plpc 1) is recommended for detection of PLP 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), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and flow cytometry (1 µg per 1 x 10^6 cells).

Suitable for use as control antibody for PLP siRNA (h): sc-42034, PLP siRNA (m): sc-42035, PLP shRNA Plasmid (h): sc-42034-SH, PLP shRNA Plasmid (m): sc-42035-SH, PLP shRNA (h) Lentiviral Particles: sc-42034-V and PLP shRNA (m) Lentiviral Particles: sc-42035-V.

Molecular Weight of PLP: 30 kDa.

Positive Controls: JEG-3 whole cell lysate: sc-364255.

SELECT PRODUCT CITATIONS

1. Haanstra, K.G., et al. 2013. Induction of experimental autoimmune encephalomyelitis with recombinant human myelin oligodendrocyte glycoprotein in incomplete Freund's adjuvant in three non-human primate species. J. Neuroimmune Pharmacol. 8: 1251-1264.

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.