

## P5CR2 (C-12): sc-138500

### BACKGROUND

P5CR2 (pyrroline-5-carboxylate reductase 2), also known as PYCR2, is a 320 amino acid cytoplasmic protein that belongs to the pyrroline-5-carboxylate reductase family. Existing as a homodecamer, P5CR2 is composed of five homodimers. Acting as a housekeeping enzyme that catalyzes the last step in proline biosynthesis, P5CR2 interacts with both NAD and NADP. In some cell types, such as erythrocytes, the primary function of P5CR2 may be the generation of NADP<sup>+</sup>. The gene that encodes P5CR2 consists of approximately 37,583 bases and maps to human chromosome 1q42.12. Comprising nearly 8% of the human genome, chromosome 1 spans 260 million base pairs, contains over 3,000 genes and houses a large number of disease-associated genes, including those that are involved in familial adenomatous polyposis, Stickler syndrome, Parkinson's disease, Gaucher disease, schizophrenia and Usher syndrome.

### REFERENCES

1. Yeh, G.C., et al. 1981. Pyrroline-5-carboxylate reductase in human erythrocytes. *J. Clin. Invest.* 67: 1042-1046.
2. Merrill, M.J., et al. 1989. Purified human erythrocyte pyrroline-5-carboxylate reductase. Preferential oxidation of NADPH. *J. Biol. Chem.* 264: 9352-9358.
3. Eudy, J.D., et al. 1998. Isolation of a gene encoding a novel member of the nuclear receptor superfamily from the critical region of Usher syndrome type IIa at 1q41. *Genomics* 50: 382-384.
4. Lau, E.K., et al. 1999. Two novel polymorphic sequences in the glucocerebrosidase gene region enhance mutational screening and founder effect studies of patients with Gaucher disease. *Hum. Genet.* 104: 293-300.
5. Tayebi, N., et al. 2001. Gaucher disease and parkinsonism: a phenotypic and genotypic characterization. *Mol. Genet. Metab.* 73: 313-321.
6. Plasilova, M., et al. 2004. Exclusion of an extracolonic disease modifier locus on chromosome 1p33-36 in a large Swiss familial adenomatous polyposis kindred. *Eur. J. Hum. Genet.* 12: 365-371.
7. Betarbet, R., et al. 2008. Fas-associated factor 1 and Parkinson's disease. *Neurobiol. Dis.* 31: 309-315.
8. Holliday, E.G., et al. 2009. Strong evidence for a novel schizophrenia risk locus on chromosome 1p31.1 in homogeneous pedigrees from Tamil Nadu, India. *Am. J. Psychiatry* 166: 206-215.
9. Yokoi, T., et al. 2009. Analysis of the vitreous membrane in a case of type 1 Stickler syndrome. *Graefes Arch. Clin. Exp. Ophthalmol.* 247: 715-718.

### CHROMOSOMAL LOCATION

Genetic locus: PYCR2 (human) mapping to 1q42.12.

### SOURCE

P5CR2 (C-12) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus of P5CR2 of human origin.

### RESEARCH USE

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

### 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-138500 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

### APPLICATIONS

P5CR2 (C-12) is recommended for detection of P5CR2 of human origin by Western Blotting (starting dilution 1:200, 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); non cross-reactive with P5CR.

Suitable for use as control antibody for P5CR2 siRNA (h): sc-88660, P5CR2 shRNA Plasmid (h): sc-88660-SH and P5CR2 shRNA (h) Lentiviral Particles: sc-88660-V.

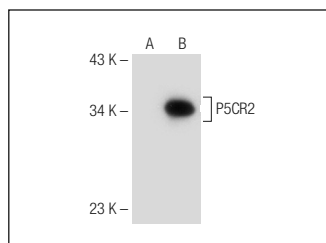
Molecular Weight of P5CR2: 34 kDa.

Positive Controls: P5CR2 (h): 293T Lysate: sc-112742.

### 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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) 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.

### DATA



P5CR2 (C-12): sc-138500. Western blot analysis of P5CR2 expression in non-transfected: sc-117752 (A) and human P5CR2 transfected: sc-112742 (B) 293T whole cell lysates.

### STORAGE

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