

# P5CR (A-12): sc-518219

## BACKGROUND

P5CR (pyrroline-5-carboxylate reductase), also known as PYCR1, is a 319 amino acid mitochondrial protein that belongs to the pyrroline-5-carboxylate reductase family. Existing as a homodecamer, P5CR is composed of five homodimers. Acting as a housekeeping enzyme that catalyzes the last step in proline biosynthesis, P5CR is involved in the cellular response to oxidative stress. Upon oxidative stress, P5CR interacts with both NAD and NADP. Defects in P5CR are the cause of cutis laxa autosomal recessive type 2B (ARCL2B), a multisystem disorder characterized by the appearance of premature aging, wrinkled and lax skin with reduced elasticity, joint laxity, craniofacial dysmorphic features, intrauterine growth retardation and some degree of postnatal growth deficiency. The gene that encodes P5CR consists of nearly 5,000 bases and maps to human chromosome 17q25.3.

## 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. Dougherty, K.M., et al. 1992. Cloning human pyrroline-5-carboxylate reductase cDNA by complementation in *Saccharomyces cerevisiae*. *J. Biol. Chem.* 267: 871-875.
4. Online Mendelian Inheritance in Man, OMIM™. 1993. Johns Hopkins University, Baltimore, MD. MIM Number: 179035. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
5. Basch, J.J., et al. 1996. Pyrroline-5-carboxylate reductase in lactating bovine mammary glands. *J. Dairy Sci.* 79: 1361-1368.

## CHROMOSOMAL LOCATION

Genetic locus: PYCR1 (human) mapping to 17q25.3.

## SOURCE

P5CR (A-12) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 98-121 of P5CR of human origin.

## PRODUCT

Each vial contains 200 µg IgG<sub>1</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

P5CR (A-12) is available conjugated to agarose (sc-518219 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-518219 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-518219 PE), fluorescein (sc-518219 FITC), Alexa Fluor® 488 (sc-518219 AF488), Alexa Fluor® 546 (sc-518219 AF546), Alexa Fluor® 594 (sc-518219 AF594) or Alexa Fluor® 647 (sc-518219 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-518219 AF680) or Alexa Fluor® 790 (sc-518219 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

## RESEARCH USE

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

## APPLICATIONS

P5CR (A-12) is recommended for detection of P5CR of 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for P5CR siRNA (h): sc-93710, P5CR shRNA Plasmid (h): sc-93710-SH and P5CR shRNA (h) Lentiviral Particles: sc-93710-V.

Molecular Weight of P5CR: 33 kDa.

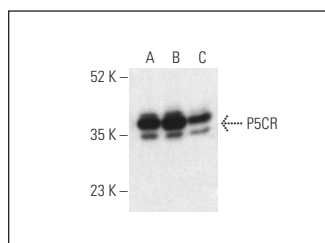
Positive Controls: PANC-1 whole cell lysate: sc-364380, COLO 320DM cell lysate: sc-2226 or MCF7 whole cell lysate: sc-2206.

## RECOMMENDED SUPPORT REAGENTS

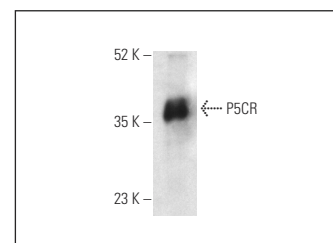
To ensure optimal results, the following support reagents are recommended:

- 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 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 m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

## DATA



P5CR (A-12): sc-518219. Western blot analysis of P5CR expression in PANC-1 (A), COLO 320DM (B) and MCF7 (C) whole cell lysates. Detection reagent used: m-IgG<sub>1</sub> BP-HRP: sc-525408.



P5CR (A-12): sc-518219. Western blot analysis of human recombinant P5CR. Detection reagent used: m-IgG<sub>1</sub> BP-HRP: sc-525408.

## STORAGE

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

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.

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