

P504S (A-4): sc-515623

BACKGROUND

P504S, also known as AMACR (α -methylacyl-CoA racemase), 2-methylacyl-CoA racemase or RACE, is an enzyme belonging to the *caiB/baiF* CoA-transferase family. Localizing to the peroxisome and mitochondrion, P504S plays a role in the metabolism of branched-chain fatty acids and bile acid intermediates. More specifically, P504S catalyzes the conversion of pristanoyl-CoA and C27-bile acyl-CoAs to their (S)-stereoisomers which can then be degraded by peroxisomal β -oxidation. Mutations in the gene encoding P504S can lead to AMACR deficiency, a disease characterized by increased concentrations of pristanic acid that is associated with adult onset sensory motor neuropathy, and/or CBAS4 (congenital bile acid synthesis defect type 4), a disorder characterized by intrahepatic cholestasis, absence of cholic acid from bile, neonatal jaundice and bile duct deficiency. In addition, P504S is over-expressed in prostate cancer and is believed to be functionally important for prostate cancer cell growth.

REFERENCES

1. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 604489. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
2. Lee, W.A. 2006. α -methylacyl-CoA-racemase expression in adenocarcinoma, dysplasia and non-neoplastic epithelium of the stomach. *Oncology* 71: 246-250.
3. Chen, W., et al. 2007. Molecular cloning and preliminary analysis of the human α -methylacyl-CoA-racemase promoter. *Mol. Biol. Rep.* 36: 423-430.
4. Shilo, K., et al. 2007. α -methylacyl-CoA-racemase racemase in pulmonary adenocarcinoma, squamous cell carcinoma, and neuroendocrine tumors: expression and survival analysis. *Arch. Pathol. Lab. Med.* 131: 1555-1560.
5. Daugherty, S.E., et al. 2007. Polymorphic variants in α -methylacyl-CoA-racemase and prostate cancer. *Prostate* 67: 1487-1497.
6. Levin, A.M., et al. 2007. Sequence variation in α -methylacyl-CoA-racemase and risk of early-onset and familial prostate cancer. *Prostate* 67: 1507-1513.

CHROMOSOMAL LOCATION

Genetic locus: AMACR (human) mapping to 5p13.2; Amacr (mouse) mapping to 15 A1.

SOURCE

P504S (A-4) is a mouse monoclonal antibody raised against amino acids 281-382 mapping at the C-terminus of P504S of human origin.

PRODUCT

Each vial contains 200 μ g IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

STORAGE

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

APPLICATIONS

P504S (A-4) is recommended for detection of P504S of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g 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 P504S siRNA (h): sc-92063, P504S siRNA (m): sc-151968, P504S shRNA Plasmid (h): sc-92063-SH, P504S shRNA Plasmid (m): sc-151968-SH, P504S shRNA (h) Lentiviral Particles: sc-92063-V and P504S shRNA (m) Lentiviral Particles: sc-151968-V.

Molecular Weight of P504S predominant isoform: 42 kDa.

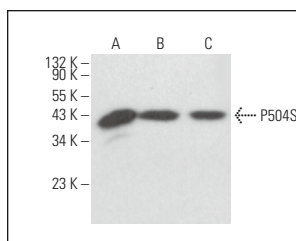
Molecular Weight of P504S other isoforms: 32/31/28/22 kDa.

Positive Controls: Hep G2 cell lysate: sc-2227, MCF7 whole cell lysate: sc-2206 or K-562 whole cell lysate: sc-2203.

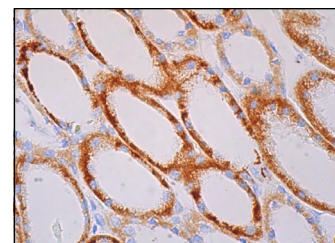
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ 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-IgG κ BP-FITC: sc-516140 or m-IgG κ 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



P504S (A-4): sc-515623. Western blot analysis of P504S expression in Hep G2 (A), MCF7 (B) and K-562 (C) whole cell lysates.



P504S (A-4): sc-515623. Immunoperoxidase staining of formalin fixed, paraffin-embedded human kidney tissue showing cytoplasmic staining of cells in tubules. Blocked with 0.25X UltraCruz® Blocking Reagent: sc-516214. Detection reagents used: m-IgG κ BP-B: sc-516142 and ImmunoCruz® ABC Kit: sc-516216.

SELECT PRODUCT CITATIONS

1. Zhang, X., et al. 2020. Rapid exacerbation featuring acute leukemoid reaction after retrolaparoscopic nephrectomy: a rare case report of renal cell carcinoma with postoperative comprehensive genomic profiling. *World J. Surg. Oncol.* 18: 155.

RESEARCH USE

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