

# ACP1 $\alpha$ (A-2): sc-393280

## BACKGROUND

Regulation of intracellular concentrations of flavoenzymes and flavin coenzymes is essential for proper cell homeostasis. Red cell acid phosphatase, known as ACP1, catalyzes the transfer of phosphate from phosphate ester substrates to suitable acceptor alcohols such as methanol and glycerol. ACP is a genetically polymorphic, cytoplasmic low-molecular-weight flavin mononucleotide phosphatase that regulates the intracellular concentrations of flavin coenzymes. The human ACP1 gene maps to chromosome 2p25.3 and encodes a pair of isozymes, Bf ( $\alpha$ ) and Bs ( $\beta$ ). The ACP1  $\alpha$  and  $\beta$  isozymes are not glycosylated. Both ACP1- $\alpha$  and ACP1- $\beta$  isozymes are 157 amino acids in length; however the 2 forms differ in sequence over an internal 34 residue segment. The two isoforms are believed to differ in substrate specificity.

## REFERENCES

1. Golden, V.L. and Sensabaugh, G.F. 1986. Phenotypic variation in the phosphotransferase activity of human red cell acid phosphatase (ACP1). *Hum. Genet.* 72: 340-343.
2. Dissing, J. and Sensabaugh, G.F. 1987. Human red cell acid phosphatase (ACP1): evidence for differences in the primary structure of the two isozymes encoded by the ACP1\*B allele. *Biochem. Genet.* 25: 919-927.
3. Dissing, J., Johnsen, A.H. and Sensabaugh, G.F. 1991. Human red cell acid phosphatase (ACP1). The amino acid sequence of the two isozymes Bf and Bs encoded by the ACP1\*B allele. *J. Biol. Chem.* 266: 20619-20625.
4. Wo, Y.Y., McCormack, A.L., Shabanowitz, J., Hunt, D.F., Davis, J.P., Mitchell, G.L. and Van Etten, R.L. 1992. Sequencing, cloning, and expression of human red cell-type acid phosphatase, a cytoplasmic phosphotyrosyl protein phosphatase. *J. Biol. Chem.* 267: 10856-10865.
5. Dissing, J. and Johnsen, A.H. 1992. Human red cell acid phosphatase (ACP1): the primary structure of the two pairs of isozymes encoded by the ACP1\*A and ACP1\*C alleles. *Biochim. Biophys. Acta* 1121: 261-268.
6. Lazaruk, K.D., Dissing, J. and Sensabaugh, G.F. 1993. Exon structure at the human ACP1 locus supports alternative splicing model for f and s isozyme generation. *Biochem. Biophys. Res. Commun.* 196: 440-446.

## CHROMOSOMAL LOCATION

Genetic locus: ACP1 (human) mapping to 2p25.3.

## SOURCE

ACP1 $\alpha$  (A-2) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 60-79 within an internal region of ACP1 $\alpha$  of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG<sub>2a</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-393280 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

## APPLICATIONS

ACP1 $\alpha$  (A-2) is recommended for detection of ACP1 $\alpha$  of human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ 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 ACP1 siRNA (h): sc-108019, ACP1 shRNA Plasmid (h): sc-108019-SH and ACP1 shRNA (h) Lentiviral Particles: sc-108019-V.

Molecular Weight of ACP1 $\alpha$ : 18 kDa.

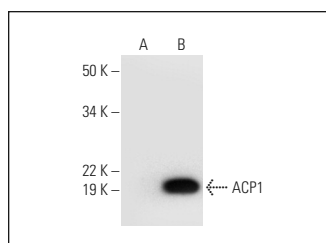
Positive Controls: ACP1 (h): 293T Lysate: sc-111661 or Hep G2 cell lysate: sc-2227.

## RECOMMENDED SUPPORT REAGENTS

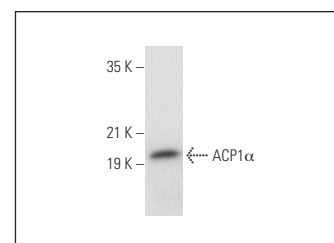
To ensure optimal results, the following support reagents are recommended:

- 1) Western Blotting: use m-IgG $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker<sup>™</sup> 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 m-IgG $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz<sup>®</sup> Mounting Medium: sc-24941 or UltraCruz<sup>®</sup> Hard-set Mounting Medium: sc-359850.

## DATA



ACP1 $\alpha$  (A-2): sc-393280. Western blot analysis of ACP1 expression in non-transfected: sc-117752 (A) and human ACP1 transfected: sc-111661 (B) 293T whole cell lysates.



ACP1 $\alpha$  (A-2): sc-393280. Western blot analysis of ACP1 $\alpha$  expression in Hep G2 whole cell lysate.

## STORAGE

Store at 4 $^{\circ}$  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](http://www.scbt.com) for detailed protocols and support products.