SANTA CRUZ BIOTECHNOLOGY, INC.

ACP1 (D-3): sc-390190

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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 (α) and Bs (β) The ACP1 α and β isozymes are not glycosylated. Both ACP1-α and ACP1-β isozymes are 157 amino acids in length; however the two 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., et al. 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., et al. 1992. Sequencing, cloning, and expression of human red cell-type acid phosphatase, a cytoplasmic phosphotyrosyl protein phosphatase. J. Biol. Chem. 267: 10856-10865.

CHROMOSOMAL LOCATION

Genetic locus: ACP1 (human) mapping to 2p25.3; Acp1 (mouse) mapping to 12 A2.

SOURCE

ACP1 (D-3) is a mouse monoclonal antibody raised against amino acids 8-156 mapping near the N-terminus of ACP1 of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

ACP1 (D-3) is available conjugated to agarose (sc-390190 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-390190 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-390190 PE), fluorescein (sc-390190 FITC), Alexa Fluor® 488 (sc-390190 AF488), Alexa Fluor® 546 (sc-390190 AF546), Alexa Fluor® 594 (sc-390190 AF594) or Alexa Fluor® 647 (sc-390190 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-390190 AF680) or Alexa Fluor® 790 (sc-390190 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

STORAGE

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

APPLICATIONS

ACP1 (D-3) is recommended for detection of ACP1 of mouse, rat and 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 ACP1 siRNA (h): sc-108019, ACP1 siRNA (m): sc-44359, ACP1 shRNA Plasmid (h): sc-108019-SH, ACP1 shRNA Plasmid (m): sc-44359-SH, ACP1 shRNA (h) Lentiviral Particles: sc-108019-V and ACP1 shRNA (m) Lentiviral Particles: sc-44359-V.

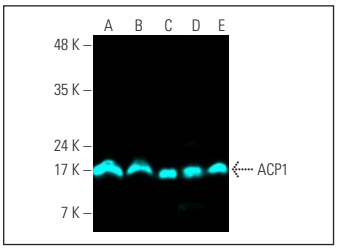
Molecular Weight of ACP1: 18 kDa.

Positive Controls: Jurkat whole cell lysate: sc-2204, Hep G2 cell lysate: sc-2227 or KNRK whole cell lysate: sc-2214.

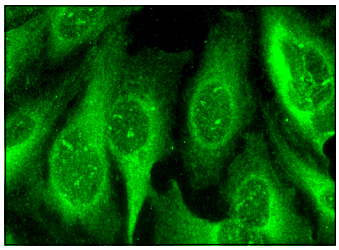
RECOMMENDED SUPPORT REAGENTS

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



ACP1 (D-3) Alexa Fluor® 647: sc-390190 AF647. Direct fluorescent western blot analysis of ACP1 expression in KNRK (**A**), COLO 205 (**B**), Jurkat (**C**), NIH/3T3 (**D**) and Hep G2 (**E**) whole cell lysates.



ACP1 (D-3): sc-390190. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic and nuclear localization.

SELECT PRODUCT CITATIONS

1. Clerici, S.P., et al. 2021. Colorectal cancer cell-derived small extracellular vesicles educate human fibroblasts to stimulate migratory capacity. Front. Cell Dev. Biol. 9: 696373.
2. Ogawa, Y. and Imamoto, N. 2021. Methods to separate nuclear soluble fractions reflecting localizations in living cells. iScience 24: 103503.

RESEARCH USE

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

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