SANTA CRUZ BIOTECHNOLOGY, INC.

ACP1α/β (Q18): sc-100343

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., et al. 1986. Phenotypic variation in the phosphotransferase activity of human red cell acid phosphatase (ACP1). Hum. Genet. 72: 340-343.
2. Dissing, J., et al. 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.

CHROMOSOMAL LOCATION

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

SOURCE

ACP1α/β (Q18) is a mouse monoclonal antibody raised against recombinant ACP1α/β of human origin.

PRODUCT

Each vial contains 100 µg IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

ACP1α/β (Q18) is recommended for detection of ACP1α and ACP1β of mouse, rat and 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).

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.

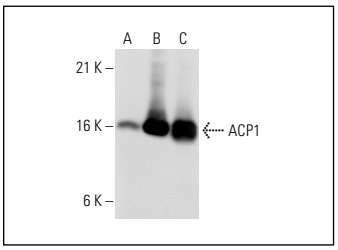
Molecular Weight of ACP1α/β: 18 kDa.

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

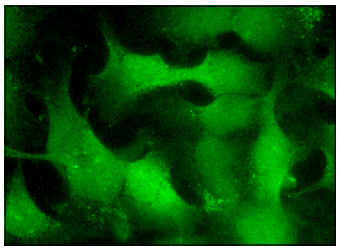
RECOMMENDED SUPPORT REAGENTS

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



ACP1α/β (Q18): sc-100343. Western blot analysis of ACP1 expression in non-transfected 293T: sc-117752 (**A**), human ACP1 transfected 293T: sc-111661 (**B**) and Hep G2 (**C**) whole cell lysates.



ACP1α/β (Q18) : sc-100343. Immunofluorescence staining of methanol-fixed Hep G2 cells showing nuclear and cytoplasmic localization.

SELECT PRODUCT CITATIONS

1. Hoekstra, E., et al. 2015. Low molecular weight protein tyrosine phosphatase (LMWPTP) upregulation mediates malignant potential in colorectal cancer. Oncotarget 6: 8300-8312.
2. Ruela-de-Sousa, R.R., et al. 2016. Low-molecular-weight protein tyrosine phosphatase predicts prostate cancer outcome by increasing the metastatic potential. Eur. Urol. 69: 710-719.
3. Kurose, H., et al. 2019. Elevated expression of EPHA2 is associated with poor prognosis after radical prostatectomy in prostate cancer. Anticancer Res. 39: 6249-6257.
4. Faria, A.V.S., et al. 2019. Targeting tyrosine phosphatases by 3-bromopyruvate overcomes hyperactivation of platelets from gastrointestinal cancer patients. J. Clin. Med. 8: 936.
5. Faria, A.V.S., et al. 2022. Platelet-dependent signaling and low molecular weight protein tyrosine phosphatase expression promote aggressive phenotypic changes in gastrointestinal cancer cells. Biochim. Biophys. Acta Mol. Basis Dis. 1868: 166280.

STORAGE

Store at 4° 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.