SANTA CRUZ BIOTECHNOLOGY, INC.

RPE (F-10): sc-393655

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

RPE (ribulose-5-phosphate-3-epimerase), also known as RPE2-1, is a 228 amino acid protein belonging to the ribulose phosphate binding superfamily. Ubiquitously expressed but found in highest levels in red blood cells, lymphocytes and fibroblasts, RPE exists as two alternatively spliced isoforms. RPE shares 96% sequence identity with the human protein rcRPE and is encoded by a gene located on human chromosome 2. Chromosome 2 houses over 1,400 genes and comprises nearly 8% of the human genome. Harlequin icthyosis, a rare and morbid skin deformity, is associated with mutations in the ABCA12 gene, while the lipid metabolic disorder sitosterolemia is associated with defects in the ABCG5 and ABCG8 genes. Additionally, an extremely rare recessive genetic disorder, Alström syndrome, is caused by mutations in the ALMS1 gene, which maps to chromosome 2.

REFERENCES

1. Spencer, N., et al. 1980. Biochemical genetics of the pentose phosphate cycle: human ribose 5-phosphate isomerase (RPI) and ribulose 5-phosphate 3-epimerase (RPE). Ann. Hum. Genet. 43: 335-342.
2. Karmali, A., et al. 1983. Purification, properties and assay of D-ribulose 5-phosphate 3-epimerase from human erythrocytes. Biochem. J. 211: 617-623.
3. Dallapiccola, B., et al. 1988. Deletion 2q31.3-2q33.3: gene dosage effect of ribulose 5-phosphate 3-epimerase. Hum. Genet. 79: 92.
4. Ijdo, J.W., et al. 1991. Origin of human chromosome 2: an ancestral telomere-telomere fusion. Proc. Natl. Acad. Sci. USA 88: 9051-9055.
5. Avarello, R., et al. 1992. Evidence for an ancestral alphoid domain on the long arm of human chromosome 2. Hum. Genet. 89: 247-249.

CHROMOSOMAL LOCATION

Genetic locus: RPE (human) mapping to 2q34, RPEL1 (human) mapping to 10q24.33; Rpe (mouse) mapping to 1 C3.

SOURCE

RPE (F-10) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 69-83 within an internal region of RPE of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

RPE (F-10) is available conjugated to agarose (sc-393655 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-393655 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-393655 PE), fluorescein (sc-393655 FITC), Alexa Fluor® 488 (sc-393655 AF488), Alexa Fluor® 546 (sc-393655 AF546), Alexa Fluor® 594 (sc-393655 AF594) or Alexa Fluor® 647 (sc-393655 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-393655 AF680) or Alexa Fluor® 790 (sc-393655 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-393655 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

RPE (F-10) is recommended for detection of RPE of mouse, rat and human origin and rcRPE 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 RPE siRNA (m): sc-153100, RPE shRNA Plasmid (m): sc-153100-SH and RPE shRNA (m) Lentiviral Particles: sc-153100-V.

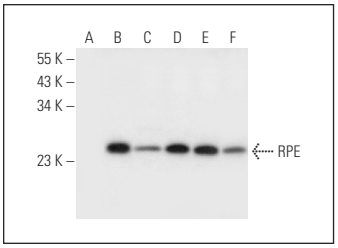
Molecular Weight of RPE: 25 kDa.

Positive Controls: RPE (h): 293T Lysate: sc-111455, HeLa whole cell lysate: sc-2200 or Hep G2 cell lysate: sc-2227.

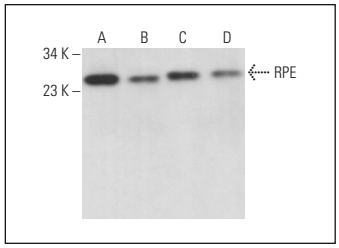
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-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



RPE (F-10): sc-393655. Western blot analysis of RPE expression in non-transfected 293T: sc-117752 (**A**), human RPE transfected 293T: sc-111455 (**B**), Caki-1 (**C**), HeLa (**D**), Hep G2 (**E**) and K-562 (**F**) whole cell lysates.



RPE (F-10): sc-393655. Western blot analysis of RPE expression in HEL 92.1.7 (**A**), PC-3 (**B**), J774.A1 (**C**) and A-10 (**D**) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Wang, H.L., et al. 2022. Sirtuin5 protects colorectal cancer from DNA damage by keeping nucleotide availability. Nat. Commun. 13: 6121.

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.