SANTA CRUZ BIOTECHNOLOGY, INC.

RPIA (P-12): sc-161205

BACKGROUND

RPIA (ribose 5-phosphate isomerase A), also known as RPI (rhosphoriboisomerase), is a 311 amino acid enzyme that catalyzes the conversion of ribose-5-phosphate to ribulose-5-phosphate in the pentose-phosphate pathway. Essential for carbohydrate metabolism, RPIA is a member of the ribose 5-phosphate isomerase family and is encoded by a gene that maps to human chromosome 2p11.2. Defects in the RPIA gene are the cause of ribose 5-phosphate isomerase deficiency (RPID), a disorder characterized by leukoencephalopathy and peripheral neuropathy. A number of other diseases are linked to genes on chromosome 2 including Harlequin icthyosis, sitosterolemia and Alström syndrome.

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. Bublitz, C., et al. 1988. The pentose phosphate pathway in the endoplasmic reticulum. J. Biol. Chem. 263: 12849-12853.
3. Apel, T.W., et al. 1995. The ribose 5-phosphate isomerase-encoding gene is located immediately downstream from that encoding murine immunoglobulin κ. Gene 156: 191-197.
4. Shulenin, S., et al. 2001. An ATP-binding cassette gene (ABCG5) from the ABCG (White) gene subfamily maps to human chromosome 2p21 in the region of the Sitosterolemia locus. Cytogenet. Cell Genet. 92: 204-208.
5. Hearn, T., et al. 2002. Mutation of ALMS1, a large gene with a tandem repeat encoding 47 amino acids, causes Alström syndrome. Nat. Genet. 31: 79-83.
6. Huck, J.H., et al. 2004. Ribose-5-phosphate isomerase deficiency: new inborn error in the pentose phosphate pathway associated with a slowly progressive leukoencephalopathy. Am. J. Hum. Genet. 74: 745-751.
7. Kelsell, D.P., et al. 2005. Mutations in ABCA12 underlie the severe congenital skin disease harlequin ichthyosis. Am. J. Hum. Genet. 76: 794-803.

CHROMOSOMAL LOCATION

Genetic locus: RPIA (human) mapping to 2p11.2; Rpia (mouse) mapping to 6 C1.

SOURCE

RPIA (P-12) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of RPIA of human origin.

STORAGE

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

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-161205 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

RPIA (P-12) is recommended for detection of RPIA 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); non cross-reactive with RPIB9.

RPIA (P-12) is also recommended for detection of RPIA in additional species, including canine and porcine.

Suitable for use as control antibody for RPIA siRNA (h): sc-94587, RPIA siRNA (m): sc-153103, RPIA shRNA Plasmid (h): sc-94587-SH, RPIA shRNA Plasmid (m): sc-153103-SH, RPIA shRNA (h) Lentiviral Particles: sc-94587-V and RPIA shRNA (m) Lentiviral Particles: sc-153103-V.

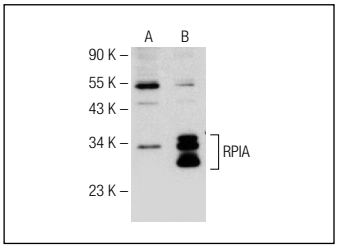
Molecular Weight of RPIA: 33 kDa.

Positive Controls: RPIA (h): 293T Lysate: sc-113186.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ 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 donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

DATA



RPIA (P-12): sc-161205. Western blot analysis of RPIA expression in non-transfected: sc-117752 (**A**) and human RPIA transfected: sc-113186 (**B**) 293T whole cell lysates.

RESEARCH USE

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