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Lieferung & Zahlungsart

siehe unsere Liefer- und Versandbedingungen

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SANTA CRUZ BIOTECHNOLOGY, INC.

RPIA siRNA (m): sc-153103

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. and Hopkinson, D.A. 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. and Steavenson, S. 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.
8. Berry, G.T. 2008. The unexplored potential of the pentose phosphate pathway in health and disease. J. Inherit. Metab. Dis. 31: 661.

CHROMOSOMAL LOCATION

Genetic locus: Rpia (mouse) mapping to 6 C1.

PRODUCT

RPIA siRNA (m) is a pool of 3 target-specific 19-25 nt siRNAs designed to knock down gene expression. Each vial contains 3.3 nmol of lyophilized siRNA, sufficient for a 10 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see RPIA shRNA Plasmid (m): sc-153103-SH and RPIA shRNA (m) Lentiviral Particles: sc-153103-V as alternate gene silencing products.

For independent verification of RPIA (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-153103A, sc-153103B and sc-153103C.

STORAGE AND RESUSPENSION

Store lyophilized siRNA duplex at -20° C with desiccant. Stable for at least one year from the date of shipment. Once resuspended, store at -20° C, avoid contact with RNAses and repeated freeze thaw cycles.

Resuspend lyophilized siRNA duplex in 330 µl of the RNAse-free water provided. Resuspension of the siRNA duplex in 330 µl of RNAse-free water makes a 10 µM solution in a 10 µM Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

RPIA siRNA (m) is recommended for the inhibition of RPIA expression in mouse cells.

SUPPORT REAGENTS

For optimal siRNA transfection efficiency, Santa Cruz Biotechnology's siRNA Transfection Reagent: sc-29528 (0.3 ml), siRNA Transfection Medium: sc-36868 (20 ml) and siRNA Dilution Buffer: sc-29527 (1.5 ml) are recommended. Control siRNAs or Fluorescein Conjugated Control siRNAs are available as 10 µM in 66 µl. Each contain a scrambled sequence that will not lead to the specific degradation of any known cellular mRNA. Fluorescein Conjugated Control siRNAs include: sc-36869, sc-44239, sc-44240 and sc-44241. Control siRNAs include: sc-37007, sc-44230, sc-44231, sc-44232, sc-44233, sc-44234, sc-44235, sc-44236, sc-44237 and sc-44238.

GENE EXPRESSION MONITORING

RPIA (D-5): sc-515328 is recommended as a control antibody for monitoring of RPIA gene expression knockdown by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) or immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

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) 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor RPIA gene expression knockdown using RT-PCR Primer: RPIA (m)-PR: sc-153103-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

RESEARCH USE

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

PROTOCOLS

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