SANTA CRUZ BIOTECHNOLOGY, INC.

GLYCTK siRNA (m): sc-145456

BACKGROUND

GLYCTK (glycerate kinase), also known as HBEBP4 (HBeAg-binding protein 4), LP5910 or HBEBP2, is a 523 amino acid protein that is expressed as seven isoforms which are present throughout the body. Localized to the cytoplasm and the mitochondrion in an isoform-specific manner, GLYCTK functions to catalyze the ATP-dependent conversion of (R)-glycerate to 3-phospho-(R)-glycerate, thereby playing an important role in neural and skeletal muscle systems. Defects in the gene encoding GLYCTK are the cause of D-glyceric acidemia, an inborn error of amino acid metabolism that is best described as nonketotic hyperglycinemia and is characterized by the excretion of D-glyceric acid in the urine.

REFERENCES

1. Kolvraa, S., et al. 1976. D-glyceric acidemia: biohcemical studies of a new syndrome. Pediatr. Res. 10: 825-830.
2. Duran, M., et al. 1987. D-glyceric acidemia: an inborn error associated with fructose metabolism. Pediatr. Res. 21: 502-506.
3. Van Schaftingen, E. 1989. D-glycerate kinase deficiency as a cause of D-glyceric aciduria. FEBS Lett. 243: 127-131.
4. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 610516. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
5. Guo, J.H., et al. 2006. Isolation and characterization of the human D-glyceric acidemia related glycerate kinase gene GLYCTK1 and its alternatively splicing variant GLYCTK2. DNA Seq. 17: 1-7.

CHROMOSOMAL LOCATION

Genetic locus: Glyctk (mouse) mapping to 9 F1.

PRODUCT

GLYCTK 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 GLYCTK shRNA Plasmid (m): sc-145456-SH and GLYCTK shRNA (m) Lentiviral Particles: sc-145456-V as alternate gene silencing products.

For independent verification of GLYCTK (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-145456A, sc-145456B and sc-145456C.

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

GLYCTK siRNA (m) is recommended for the inhibition of GLYCTK 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

GLYCTK (N6): sc-130483 is recommended as a control antibody for monitoring of GLYCTK 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 GLYCTK gene expression knockdown using RT-PCR Primer: GLYCTK (m)-PR: sc-145456-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.