SANTA CRUZ BIOTECHNOLOGY, INC.

# G6pd2 siRNA (m): sc-145295

## BACKGROUND

Glucose-6-phosphate 1-dehydrogenase (G6PD) plays an important role in the pentose phosphate pathway. It is a member of the glucose-6-phosphate dehydrogenase family of proteins. G6PD produces pentose sugars for nucleic acid synthesis, but is also involved in the carbohydrate degradation as it is one of the main producers of NADPH reducing power. G6PD, which can be found as a homodimer or homotetramer, is primarily detected in lymphoblasts, granulocytes and sperm. Defects in G6PD can cause chronic non-spherocytic hemolytic anemia (CNSHA). G6pd2 (glucose-6-phosphate dehydrogenase 2), also known as Gpd2 or G6pdx-ps1, is a 513 amino acid protein that is expressed primarily in testis and exists as a homotetramer. Utilizing NADP as a cofactor and as a structural element in its C-terminal domain, G6pd2 catalyzes the conversion of D-glucose 6-phosphate to 6-phospho-D-glucono-1,5-lactone.

## REFERENCES


1. Ruddle, F.H., et al. 1968. Autosomal control of an electrophoretic variant of glucose-6-phosphate dehydrogenase in the mouse *(Mus musculus)*. Genetics 58: 599-606.
2. Danciger, M., et al. 1993. Genetic mapping of three GABAA receptor-subunit genes in the mouse. Genomics 16: 361-365.
3. Sommers, C.L., et al. 1995. Murine txk: a protein tyrosine kinase gene regulated by T cell activation. Oncogene 11: 245-251.
4. Hendriksen, P.J., et al. 1997. Testis-specific expression of a functional retroposon encoding glucose-6-phosphate dehydrogenase in the mouse. Genomics 41: 350-359.
5. Tarantino, L.M., et al. 2000. A high-resolution radiation hybrid map of the proximal portion of mouse chromosome 5. Genomics 66: 55-64.
6. Gayral, P., et al. 2007. The evolutionary fate of recently duplicated retrogenes in mice. J. Evol. Biol. 20: 617-626.
7. Ravera, S., et al. 2010. Oligomerization studies of Leuconostoc mesenteroides G6PD activity after SDS-PAGE and blotting. Mol. Biol. 44: 472-476.


## CHROMOSOMAL LOCATION

Genetic locus: G6pd2 (mouse) mapping to 5 C3.1.

## PRODUCT

G6pd2 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 G6pd2 shRNA Plasmid (m): sc-145295-SH and G6pd2 shRNA (m) Lentiviral Particles: sc-145295-V as alternate gene silencing products.

For independent verification of G6pd2 (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-145295A, sc-145295B and sc-145295C.

## RESEARCH USE

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

## 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

G6pd2 siRNA (m) is recommended for the inhibition of G6pd2 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.

## RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor G6pd2 gene expression knockdown using RT-PCR Primer: G6pd2 (m)-PR: sc-145295-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

## PROTOCOLS

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