



## BPGM siRNA (m): sc-72657

### BACKGROUND

BPGM (2,3-bisphosphoglycerate mutase) is a 259 amino acid protein that belongs to the phosphoglycerate mutase family and exists as a homodimer that plays a crucial role in the regulation of hemoglobin oxygen. Specifically, BPGM catalyzes the conversion of 3-phospho-D-glyceroyl phosphate to 2,3-bisphospho-D-glycerate (2,3-BPG), a reaction that is essential for controlling the concentration of 2,3-BPG within the cell. The gene encoding BPGM maps to human chromosome 7, which houses over 1,000 genes and comprises nearly 5% of the human genome. Defects in some of the genes localized to chromosome 7 have been linked to Osteogenesis imperfecta, Williams-Beuren syndrome, Pendred syndrome, Lissencephaly, Citrullinemia and Shwachman-Diamond syndrome.

### REFERENCES

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2. Cohen-Solal, M., et al. 1987. Molecular cloning of the human 2,3-bisphosphoglycerate mutase cDNA and revised amino acid sequence. *Biochim. Acta* 46: S126-S130.
3. Craescu, C.T., et al. 1992. Structural modeling of the human erythrocyte bisphosphoglycerate mutase. *Biochimie* 74: 519-526.
4. Stafforini, D.M., et al. 1993. The platelet-activating factor acetylhydrolase from human erythrocytes. Purification and properties. *J. Biol. Chem.* 268: 3857-3865.
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7. Wang, Y., et al. 2004. Crystal structure of human bisphosphoglycerate mutase. *J. Biol. Chem.* 279: 39132-39138.
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### CHROMOSOMAL LOCATION

Genetic locus: Bpgm (mouse) mapping to 6 B1.

### PRODUCT

BPGM 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  $\mu$ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see BPGM shRNA Plasmid (m): sc-72657-SH and BPGM shRNA (m) Lentiviral Particles: sc-72657-V as alternate gene silencing products.

For independent verification of BPGM (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-72657A, sc-72657B and sc-72657C.

### 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  $\mu$ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330  $\mu$ l of RNase-free water makes a 10  $\mu$ M solution in a 10  $\mu$ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

### APPLICATIONS

BPGM siRNA (m) is recommended for the inhibition of BPGM 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  $\mu$ M in 66  $\mu$ l. 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

BPGM (C-4): sc-373819 is recommended as a control antibody for monitoring of BPGM 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-IgG $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  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-IgG $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  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 BPGM gene expression knockdown using RT-PCR Primer: BPGM (m)-PR: sc-72657-PR (20  $\mu$ l). 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](http://www.scbt.com) for detailed protocols and support products.