



## P protein siRNA (m): sc-61276

### BACKGROUND

P protein, also designated melanocyte-specific transporter protein, or pink-eyed dilution protein homolog, belongs to the SLC13A transporter family. P protein is a multi-pass membrane protein that localizes to the melanosome. P protein is a component in the pigmentary system involved in tyrosine transport and processing in melanocytes and facilitates the vacuolar accumulation of glutathione. Increased cellular sensitivity to arsenicals and other metalloids occurs in response to P protein expression. P protein is also thought to mediate intracellular glutathione metabolism, and its ability to regulate ionic transport may be responsible for the acidity of the melanosome. P protein plays a major role in determining brown and/or blue eye color and may also be important in determining ethnic skin color variation. Defects in OCA2, the gene encoding for P protein, can cause oculocutaneous albinism or Prader-Willi and Angelman syndrome.

### REFERENCES

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- Brilliant, M.H. 2001. The mouse p (pink-eyed dilution) and human P genes, oculocutaneous albinism type 2 (OCA2), and melanosomal pH. *Pigment Cell Res.* 14: 86-93.
- Staleva, L., et al. 2002. Pink-eyed dilution protein modulates glutathione metabolism. *Mol. Biol. Cell* 13: 4206-4220.
- Costin, G.E., et al. 2003. Ty melanocytes carrying the underwhite (uw) mutation. A model for oculocutaneous albinism (OCA) type 4. *J. Cell Sci.* 116: 3203-3212.
- Oetting, W.S., et al. 2005. P gene mutations associated with oculocutaneous albinism type II (OCA2). *Hum. Mutat.* 25: 323.
- Ni-Komatsu, L., et al. 2006. Heterologous expression of tyrosinase recapitulates the misprocessing and mistrafficking in oculocutaneous albinism type 2: effects of altering intracellular pH and pink-eyed dilution gene expression. *Exp. Eye Res.* 82: 519-528.

### CHROMOSOMAL LOCATION

Genetic locus: Oca2 (mouse) mapping to 7 B5.

### 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.

### PRODUCT

P protein 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 P protein shRNA Plasmid (m): sc-61276-SH and P protein shRNA (m) Lentiviral Particles: sc-61276-V as alternate gene silencing products.

For independent verification of P protein (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-61276A, sc-61276B and sc-61276C.

### 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

P protein siRNA (m) is recommended for the inhibition of P protein 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.

### RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor P protein gene expression knockdown using RT-PCR Primer: P protein (m)-PR: sc-61276-PR (20  $\mu$ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.