

MEL-1A-R siRNA (m): sc-40113

BACKGROUND

Melatonin (Mel), a hormone secreted by the pineal gland, is expressed at night in response to the circadian clock. Melatonin is thought to be involved in regulating reproductive physiological development and the progression of sexual maturation, and it is also thought to play a role in tumorigenesis. The melatonin receptors, MEL-1A-R and MEL-1B-R, are members of the superfamily of guanine nucleotide-binding regulatory protein (G protein)-coupled receptors. Signaling through the melatonin receptors inhibits adenylate cyclase and stimulates phospholipase C β upon activation of pertussis toxin (PTX)-sensitive G proteins. MEL-1A-R may be involved in pacing the biological clock. However, both MEL-1A-R and MEL-1B-R are implicated in controlling cellular growth in response to melatonin.

REFERENCES

1. Luboshitzky, R., et al. 1999. Melatonin and sex hormone interrelationships—a review. *J. Pediatr. Endocrinol. Metab.* 12: 355-362.
2. Brydon, L., et al. 1999. Dual signaling of human Mel_{1a} melatonin receptors via G_{i2}, G_{i3}, and G_{q/11} proteins. *Mol. Endocrinol.* 13: 2025-2038.
3. Roka, F., et al. 1999. Tight association of the human MEL-1A melatonin receptor and G_i: precoupling and constitutive activity. *Mol. Pharmacol.* 56: 1014-1024.
4. Cos, S., et al. 2000. Melatonin and mammary pathological growth. *Front. Neuroendocrinol.* 21: 133-170.
5. Shiu, S.Y., et al. 2000. Biological basis and possible physiological implications of melatonin receptor-mediated signaling in the rat epididymis. *Biol. Signals Recept.* 9: 172-187.
6. Pevet, P. 2000. Melatonin and biological rhythms. *Biol. Signals Recept.* 9: 203-212.
7. Roberts, J.E., et al. 2000. Melatonin receptors in human uveal melanocytes and melanoma cells. *J. Pineal Res.* 28: 165-171.

CHROMOSOMAL LOCATION

Genetic locus: Mtnr1a (mouse) mapping to 8 B1.1.

PRODUCT

MEL-1A-R 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see MEL-1A-R shRNA Plasmid (m): sc-40113-SH and MEL-1A-R shRNA (m) Lentiviral Particles: sc-40113-V as alternate gene silencing products.

For independent verification of MEL-1A-R (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-40113A, sc-40113B and sc-40113C.

PROTOCOLS

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

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

APPLICATIONS

MEL-1A-R siRNA (m) is recommended for the inhibition of MEL-1A-R 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 μ M in 66 μ 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

MEL-1A/B-R (B-8): sc-398788 is recommended as a control antibody for monitoring of MEL-1A-R 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 κ BP-HRP: sc-516102 or m-IgG κ 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 κ BP-FITC: sc-516140 or m-IgG κ 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 MEL-1A-R gene expression knockdown using RT-PCR Primer: MEL-1A-R (m)-PR: sc-40113-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Sung, J.Y., et al. 2018. The melatonin signaling pathway in a long-term memory *in vitro* study. *Molecules* 23: 737.

RESEARCH USE

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