

# MCH-1R siRNA (m): sc-42018

## BACKGROUND

Melanin-concentrating hormone (MCH) is a 19 amino acid cyclic neuropeptide, which is mainly expressed in the hypothalamus. MCH modulates feeding behavior, aggression, anxiety, arousal and reproductive function in mammals by controlling the release of luteinizing hormone (LH). The melanin-concentrating hormone receptor (MCHR, also designated SLC-1) is a glycosylated G protein-coupled receptor. MCHR mediates the effects of MCH through  $G_{\alpha i}$  and/or  $G_{\alpha q}$  signaling and is expressed in several regions of the brain, including the cerebral cortex, amygdala, thalamus and hypothalamus. MCH and MCHR have also been implicated in stimulating leptin expression and secretion in adipocytes, which suggests that the melanin-concentrating hormone and its receptor may be potential targets for modulating obesity.

## REFERENCES

1. Drozd, R., et al. 1999. (D-(p-benzoylphenylalanine) 13, tyrosine19)-melanin-concentrating hormone, a potent analogue for MCH receptor crosslinking. *J. Pept. Sci.* 5: 234-242.
2. Saito, Y., et al. 1999. Molecular characterization of the melanin-concentrating-hormone receptor. *Nature* 400: 265-269.
3. Murray, J.F., et al. 2000. The influence of gonadal steroids on pre-pro melanin-concentrating hormone mRNA in female rats. *J. Neuroendocrinol.* 12: 53-59.
4. Murray, J.F., et al. 2000. Melanin-concentrating hormone, melanocortin receptors and regulation of luteinizing hormone release. *J. Neuroendocrinol.* 12: 217-223.
5. Hervieu, G.J., et al. 2000. The distribution of the mRNA and protein products of the melanin-concentrating hormone (MCH) receptor gene, SLC-1, in the central nervous system of the rat. *Eur. J. Neurosci.* 12: 1194-1216.
6. Hawes, B.E., et al. 2000. The melanin-concentrating hormone receptor couples to multiple G proteins to activate diverse intracellular signaling pathways. *Endocrinology* 141: 4524-4532.
7. Bradley, R.L., et al. 2000. Melanin-concentrating hormone regulates leptin synthesis and secretion in rat adipocytes. *Diabetes* 49: 1073-1077.

## CHROMOSOMAL LOCATION

Genetic locus: Mchr1 (mouse) mapping to 15 E1.

## PRODUCT

MCH-1R 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 MCH-1R shRNA Plasmid (m): sc-42018-SH and MCH-1R shRNA (m) Lentiviral Particles: sc-42018-V as alternate gene silencing products.

For independent verification of MCH-1R (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-42018A, sc-42018B and sc-42018C.

## 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

MCH-1R siRNA (m) is recommended for the inhibition of MCH-1R 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 MCH-1R gene expression knockdown using RT-PCR Primer: MCH-1R (m)-PR: sc-42018-PR (20  $\mu$ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

## SELECT PRODUCT CITATIONS

1. Shimizu, K., et al. 2015. Histamine released from epidermal keratinocytes plays a role in  $\alpha$ -melanocyte-stimulating hormone-induced itching in mice. *Am. J. Pathol.* 185: 3003-3010.

## 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.