SANTA CRUZ BIOTECHNOLOGY, INC.

MOR-1 siRNA (m): sc-35958

BACKGROUND

Endogenous opioid peptides and opiates, like morphine, transmit their pharmacological effects through membrane bound opioid receptors. Pharmacological studies and molecular cloning have led to the identification of three different types of opioid receptor, μ-type, δ-type and κ-type, also designated MOR-1, DOR-1 and KOR-1, respectively. MOR-1 is a receptor for β-endorphin, DOR-1 is a receptor for enkephalins, and KOR-1 is a receptor for dynorphins. The three opioid receptor types are highly homologous and belong to the superfamily of G protein-coupled receptors. Opioid receptors have been shown to modulate a range of brain functions, including instinctive behavior and emotions. This regulation is thought to involve the inhibition of neurotransmitter release by reducing calcium ion currents and increasing potassium ion conductance.

REFERENCES

1. Chang, K.J., et al. 1979. Multiple opiate receptors. Enkephalins and morphine bind to receptors of different specificty. J. Biol. Chem. 254: 2610-2618.
2. Cherubini, E., et al. 1985. μ and κ opioids inhibit transmitter release by different mechanisms. Proc. Natl. Acad. Sci. USA 82: 1860-1863.
3. Schoffelmeer, A.N., et al. 1988. μ-, δ- and κ-opioid receptor-mediated inhibition of neurotransmitter release and adenylate cyclase activity in rat brain slices: studies with fentanyl isothiocyanate. Eur. J. Pharmacol. 154: 169-178.
4. Knapp, R.J., et al. 1995. Molecular biology and pharmacology of cloned opioid receptors. FASEB J. 9: 516-525.
5. Satoh, M., et al. 1995. Molecular pharmacology of the opioid receptors. Pharmacol. Ther. 68: 343-364.

CHROMOSOMAL LOCATION

Genetic locus: Oprm1 (mouse) mapping to 10 A1.

PRODUCT

MOR-1 siRNA (m) is a target-specific 19-25 nt siRNA 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 MOR-1 shRNA Plasmid (m): sc-35958-SH and MOR-1 shRNA (m) Lentiviral Particles: sc-35958-V as alternate gene silencing 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 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

MOR-1 siRNA (m) is recommended for the inhibition of MOR-1 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.

GENE EXPRESSION MONITORING

MOR-1 (D-12): sc-515933 is recommended as a control antibody for monitoring of MOR-1 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-IgGκ BP-HRP: sc-516102 or m-IgGκ 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-IgGκ BP-FITC: sc-516140 or m-IgGκ 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 MOR-1 gene expression knockdown using RT-PCR Primer: MOR-1 (m)-PR: sc-35958-PR (20 µl, 545 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Zagon, I.S., et al. 2011. T lymphocyte proliferation is suppressed by the opioid growth factor ([Met^5]-enkephalin)-opioid growth factor receptor axis: implication for the treatment of autoimmune diseases. Immunobiology 216: 579-590.
2. Merighi, S., et al. 2012. Cannabinoid CB_2 receptor attenuates morphine-induced inflammatory responses in activated microglial cells. Br. J. Pharmacol. 166: 2371-2385.
3. Gessi, S., et al. 2016. The activation of μ-opioid receptor potentiates LPS-induced NFκB promoting an inflammatory phenotype in microglia. FEBS Lett. 590: 2813-2826.

RESEARCH USE

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