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KOR-3 siRNA (h): sc-42150

BACKGROUND

Endogenous opioid peptides and opiates like morphine mediate their cellular effects through membrane bound receptors. Three different types of opioid receptors have been identified, μ -type, δ -type and κ -type. A fourth opioid receptor, KOR-3 (κ -type opioid receptor, also designated ORL1-opioid receptor-like 1), has been identified. Though closely related genetically to the other opioid receptors, KOR-3 has a distinct pharmacological profile. Nociceptin, the neuropeptide which activates KOR-3, is structurally similar to the κ -opioid peptide Dynorphin A, but quite different in its mode of interaction with its receptor. KOR-3 is widely expressed in the nervous system, and is likely to modulate a broad range of physiological and behavioral functions.

REFERENCES

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2. Knapp, R.J., et al. 1995. Molecular biology and pharmacology of cloned opioid receptors. *FASEB J.* 9: 516-525.
3. Meunier, J.C., et al. 1995. Isolation and structure of the endogenous agonist of opioid receptor-like ORL1 receptor. *Nature* 377: 532-535.
4. Reinscheid, R.K., et al. 1995. Orphanin FQ: a neuropeptide that activates an opioidlike G protein-coupled receptor. *Science* 270: 792-794.
5. Darland, T., et al. 1998. Orphanin FQ/Nociceptin: a role in pain and analgesia, but so much more. *Trends Neurosci.* 21: 215-221.
6. Mollereau, C., et al. 1999. Distinct mechanisms for activation of the opioid receptor-like 1 and κ -opioid receptors by Nociceptin and Dynorphin A. *Mol. Pharmacol.* 55: 324-331.
7. Connor, M., et al. 1999. Opioid receptor signalling mechanisms. *Clin. Exp. Pharmacol. Physiol.* 26: 493-499.

CHROMOSOMAL LOCATION

Genetic locus: OPRL1 (human) mapping to 20q13.33.

PRODUCT

KOR-3 siRNA (h) 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 KOR-3 shRNA Plasmid (h): sc-42150-SH and KOR-3 shRNA (h) Lentiviral Particles: sc-42150-V as alternate gene silencing products.

For independent verification of KOR-3 (h) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-42150A, sc-42150B and sc-42150C.

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

KOR-3 siRNA (h) is recommended for the inhibition of KOR-3 expression in human 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor KOR-3 gene expression knockdown using RT-PCR Primer: KOR-3 (h)-PR: sc-42150-PR (20 μ 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.