SANTA CRUZ BIOTECHNOLOGY, INC.

# Oxytocin-R siRNA (h): sc-40154

## BACKGROUND

Oxytocin (OXT) is a pituitary hormone that has long been associated with uterine contraction during parturition and with milk ejection during nursing. Studies have suggested that oxytocin is also a neurotransmitter with reproductively-important effects. Oxytocin-R (OTR) is the receptor for oxytocin and is an integral membrane protein that is a member of the G protein-coupled receptor family. Uterine and cervical oxytocin receptors are significantly up-regulated during gestation, via both endocrine and mechanical signals, suggesting that Oxytocin-R may be involved in parturition. Inhibition of Oxytocin-R synthesis by IFN-$\alpha$ and IFN-$\tau$ may be a mechanism for Oxytocin-R suppression during early pregnancy.

## REFERENCES


1. Kimura, T., et al. 1992. Structure and expression of a human oxytocin receptor. Nature 356: 526-529.
2. Rozen, F., et al. 1995. Structure, characterization, and expression of the rat oxytocin receptor gene. Proc. Natl. Acad. Sci. USA 92: 200-204.
3. Wathes, D.C., et al. 1995. The oxytocin receptor, luteolysis and the maintenance of pregnancy. J. Reprod. Fertil. Suppl. 49: 53-67.
4. Kimura, T., et al. 1996. Expression of oxytocin receptor in human pregnant myometrium. Endocrinology 137: 780-785.
5. Maggi, M., et al. 1996. Interferon-$\alpha$ downregulates expression of the oxytocin receptor in cultured human myometrial cells. Am. J. Physiol. Endocrinol. 271: E840-E846.
6. Insel, T.R., et al. 1997. Central oxytocin and reproductive behaviours. Rev. Reprod. 2: 28-37.
7. Ou, C.W., et al. 1998. Increased expression of the rat myometrial oxytocin receptor messenger ribonucleic acid during labor requires both mechanical and hormonal signals. Biol. Reprod. 59: 1055-1061.
8. Umscheid, C.A., et al 1998. Up-regulation of oxytocin receptor messenger ribonucleic acid and protein by estradiol in the cervix of ovariectomized rat. Biol. Reprod. 59: 1131-1138.


## CHROMOSOMAL LOCATION

Genetic locus: OXTR (human) mapping to 3p25.3.

## PRODUCT

Oxytocin-R 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see Oxytocin-R shRNA Plasmid (h): sc-40154-SH and Oxytocin-R shRNA (h) Lentiviral Particles: sc-40154-V as alternate gene silencing products.

For independent verification of Oxytocin-R (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-40154A, sc-40154B and sc-40154C.

## 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

Oxytocin-R siRNA (h) is recommended for the inhibition of Oxytocin-R 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 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

Oxytocin-R (C-4): sc-515809 is recommended as a control antibody for monitoring of Oxytocin-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$\kappa$ BP-HRP: sc-516102 or m-IgG$\kappa$ 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$\kappa$ BP-FITC: sc-516140 or m-IgG$\kappa$ 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 Oxytocin-R gene expression knockdown using RT-PCR Primer: Oxytocin-R (h)-PR: sc-40154-PR (20 µl, 599 bp). 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.

## PROTOCOLS

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