SANTA CRUZ BIOTECHNOLOGY, INC.

PXR siRNA (m): sc-44058

BACKGROUND

Steroid hormones function as signaling molecules by diffusing into cells and interacting with specific intracellular receptors to regulate gene expression. This superfamily of receptors includes both steroid and nonsteroid receptors. Like many nonsteroid hormone receptors, PXR (pregnane X receptor) binds as a heterodimer with RXR to a DNA sequence typical of a nonsteroid hormone receptor; however, PXR is activated by several steroids, such as naturally occurring pregnanes and synthetic glucocorticoids and anti-glucocorticoids. PXR exists as two alternatively spliced isoforms, PXR.1 and PXR.2. PXR is thought to define a novel steroid hormone signaling pathway that may account for some of the effects of synthetic glucocorticoids and antiglucocorticoids that are not mediated through the classical glucocorticoid receptor signaling pathway.

REFERENCES

1. Evans, R.M. 1988. The steriod and thyroid hormone receptor superfamily. Science 240: 889-895.
2. Mangelsdorf, D.J., et al. 1995. The RXR heterodimers and orphan receptors. Cell 83: 841-850.
3. Beato, M., et al. 1995. Steroid hormone receptors: many actors in search of a plot. Cell 83: 851-857.
4. Huss, J.M., et al. 1996. Dexamethasone responsiveness of a major glucocorticoid-inducible CYP3A gene is mediated by elements unrelated to a glucocorticoid receptor binding motif. Proc. Natl. Acad. Sci. USA 93: 4666-4670.

CHROMOSOMAL LOCATION

Genetic locus: Nr1i2 (mouse) mapping to 16 B3.

PRODUCT

PXR 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see PXR shRNA Plasmid (m): sc-44058-SH and PXR shRNA (m) Lentiviral Particles: sc-44058-V as alternate gene silencing products.

For independent verification of PXR (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-44058A, sc-44058B and sc-44058C.

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

PXR siRNA (m) is recommended for the inhibition of PXR 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor PXR gene expression knockdown using RT-PCR Primer: PXR (m)-PR: sc-44058-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Zhang, X., et al. 2015. Tanshinone IIA ameliorates dextran sulfate sodium-induced inflammatory bowel disease via the pregnane X receptor. Drug Des. Devel. Ther. 9: 6343-6362.
2. Zhang, X., et al. 2015. Tanshinone IIA exerts protective effects in a LCA-induced cholestatic liver model associated with participation of pregnane X receptor. J. Ethnopharmacol. 164: 357-367.
3. Litwa, E., et al. 2016. RXRα, PXR and CAR xenobiotic receptors mediate the apoptotic and neurotoxic actions of nonylphenol in mouse hippocampal cells. J. Steroid Biochem. Mol. Biol. 156: 43-52.
4. Whyte-Allman, S.K., et al. 2017. Xenobiotic nuclear receptors pregnane X receptor and constitutive androstane receptor regulate antiretroviral drug efflux transporters at the blood-testis barrier. J. Pharmacol. Exp. Ther. 363: 324-335.
5. Liu, P., et al. 2022. PXR activation impairs hepatic glucose metabolism partly via inhibiting the HNF4α-GLUT2 pathway. Acta Pharm. Sin. B 12: 2391-2405.

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.