SANTA CRUZ BIOTECHNOLOGY, INC.

FXR siRNA (r): sc-108079

BACKGROUND

The steroid receptor superfamily acts through direct association with DNA sequences known as hormone response elements (HREs) and binds DNA as either homo- or heterodimers. The promiscuous mediator of heterodimerization, RXR, is the receptor for 9-*cis* retinoic acid, and dimerizes with VDR, TR, PPAR and several novel receptors, including LXR (also referred to as RLD-1) and FXR. FXR and LXR fall into a category of proteins termed "orphan receptors" because of their lack of a defined function and, in the case of LXR, the lack of a defined ligand. FXR has been shown to bind a class of lipid molecules called farnesoids. LXR/RXR heterodimers have highest affinity for DR-4 DNA elements while FXR/RXR heterodimers bind IR-1 elements. Both LXR/RXR and FXR/RXR heterodimers retain their responsiveness to 9-*cis* retinoic acid.

REFERENCES

1. Zechel, C., et al. 1994. The dimerization interfaces formed between the DNA binding domains of RXR, RAR and TR determine the binding specificity and polarity of the full-length receptors to direct repeats. EMBO J. 13: 1425-1433.
2. Forman, B.M., et al. 1995. Identification of a nuclear receptor that is activated by farnesol metabolites. Cell 81: 687-693.
3. Mangelsdorf, D.J., et al. 1995. The nuclear receptor superfamily: the second decade. Cell 83: 835-839.
4. Mangelsdorf, D.J., et al. 1995. The RXR heterodimers and orphan receptors. Cell 83: 841-850.
5. Willy, P.J., et al. 1995. LXR, a nuclear receptor that defines a distinct retinoid response pathway. Genes Dev. 9: 1033-1045.
6. Leblanc, B.P., et al. 1995. 9-*cis* retinoic acid signaling: changing partners causes some excitement. Genes Dev. 9: 1811-1816.

CHROMOSOMAL LOCATION

Genetic locus: Nr1h4 (human) mapping to 7q13.

PRODUCT

FXR siRNA (r) 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 FXR shRNA Plasmid (r): sc-108079-SH and FXR shRNA (r) Lentiviral Particles: sc-108079-V as alternate gene silencing products.

For independent verification of FXR (r) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-108079A, sc-108079B and sc-108079C.

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.

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

FXR siRNA (r) is recommended for the inhibition of FXR expression in rat 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 FXR gene expression knockdown using RT-PCR Primer: FXR (r)-PR: sc-108079-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.