

ASGPR1 siRNA (h): sc-29746

BACKGROUND

The asialoglycoprotein receptor (ASGPR, also designated hepatic lectin) is a type II integral membrane protein and is expressed in hepatic cells. ASGPR is composed of two homologous subunits, ASGPR1 and ASGPR2, that form multimeric complexes. Both ASGPR1 and ASGPR2 contain four functional domains, which include a cytosolic domain, a transmembrane domain, a stalk domain and a carbohydrate recognition domain (CRD). The CRD allows ASGPR to bind glycoproteins with terminal galactose and N-acetylgalactosamine residues while in the presence of calcium. After binding, the ASGPR-glycoprotein complex is then internalized into the cell, where the receptor and ligand are dissociated and ASGPR returns to the cell membrane. ASGPR can also bind hepatitis B virus (HBV) and mediate the HBV-infection of liver cells. The specific interaction with HBV makes ASGPR a potential target for therapeutic purposes.

REFERENCES

1. Treichel, U., et al. 1995. High-yield purification and characterization of human asialoglycoprotein receptor. *Protein Expr. Purif.* 6: 251-255.
2. Braun, J.R., et al. 1996. The major subunit of the asialoglycoprotein receptor is expressed on the hepatocellular surface in mice lacking the minor receptor subunit. *J. Biol. Chem.* 271: 21160-21166.
3. Treichel, U., et al. 1997. Receptor-mediated entry of hepatitis B virus particles into liver cells. *Arch. Virol.* 142: 493-498.
4. Park, J.H., et al. 1998. Detection of the asialoglycoprotein receptor on cell lines of extrahepatic origin. *Biochem. Biophys. Res. Commun.* 244: 304-311.
5. Julyan, P.J., et al. 1999. Preliminary clinical study of the distribution of HPMA copolymers bearing doxorubicin and galactosamine. *J. Control. Release* 57: 281-290.
6. Meier, M., et al. 2000. Crystal structure of the carbohydrate recognition domain of the H1 subunit of the asialoglycoprotein receptor. *J. Mol. Biol.* 300: 857-865.

CHROMOSOMAL LOCATION

Genetic locus: ASGR1 (human) mapping to 17p13.1.

PRODUCT

ASGPR1 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 ASGPR1 shRNA Plasmid (h): sc-29746-SH and ASGPR1 shRNA (h) Lentiviral Particles: sc-29746-V as alternate gene silencing products.

For independent verification of ASGPR1 (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-29746A, sc-29746B and sc-29746C.

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

ASGPR1 siRNA (h) is recommended for the inhibition of ASGPR1 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.

GENE EXPRESSION MONITORING

ASGPR1 (A-5): sc-393849 is recommended as a control antibody for monitoring of ASGPR1 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 κ BP-HRP: sc-516102 or m-IgG κ 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 κ BP-FITC: sc-516140 or m-IgG κ 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 ASGPR1 gene expression knockdown using RT-PCR Primer: ASGPR1 (h)-PR: sc-29746-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.