BACKGROUND
Sulfotransferase enzymes catalyze the sulfate conjugation of many hormones, neurotransmitters, drugs and xenobiotic compounds. These enzymes differ in their tissue distribution and substrate specificity, although the gene structure (number and length of exons) is similar among family members. GAL3ST4 (galactose-3-O-sulfotransferase 4) is a 486 amino acid single-pass type II membrane protein belonging to the galactose-3-O-sulfotransferase family. Localizing to Golgi apparatus, GAL3ST4 is expressed in thymus, testis, ovary, placenta, spinal cord, trachea and adrenal gland. Low levels of GAL3ST4 can be found in brain, lung, spleen, prostate, small intestine, colon, stomach thyroid and lymph node. GAL3ST4 catalyzes sulfonation by transferring sulfate to β-1,3-linked galactose residues in O-linked glycoproteins. GAL3ST4 utilizes manganese as a cofactor and Asialofetuin, Gal-β-1,3-GalNAc and Gal-β-1,3(GlcNAc-β-1,6) GalNAc as substrates.

REFERENCES

STORAGE AND RESUSPENSION
Store lyophilized shRNA plasmid DNA at 4°C with desiccant. Stable for at least one year from the date of shipment. Once resuspended, store at 4°C for short term storage or -80°C for long term storage. Avoid repeated freeze thaw cycles.
Resuspend lyophilized shRNA plasmid DNA in 200 µl of the deionized water provided. Resuspension of the shRNA plasmid DNA in 200 µl of deionized water makes a 0.1 µg/µl solution in a 10 mM Tris, 1 mM EDTA buffered solution.

APPLICATIONS
GAL3ST4 shRNA Plasmid (h) is recommended for the inhibition of GAL3ST4 expression in human cells.

SUPPORT REAGENTS
For optimal shRNA Plasmid transfection efficiency, Santa Cruz Biotechnology’s shRNA Plasmid Transfection Reagent: sc-108061 (0.2 ml) and shRNA Plasmid Transfection Medium: sc-108062 (20 ml) are recommended. Control shRNAs are available as 20 µg lyophilized plasmid DNA. Each encodes a scrambled shRNA sequence that will not lead to the specific degradation of any known cellular mRNA. Control shRNA Plasmids include: sc-108060, sc-108065 and sc-108066.

RT-PCR REAGENTS
Semi-quantitative RT-PCR may be performed to monitor GAL3ST4 gene expression knockdown using RT-PCR Primer: GAL3ST4 (h)-PR: sc-89662-PR (20 µl). Annealing temperature for the primers should be 55-60°C and the extension temperature should be 68-72°C.

CHROMOSOMAL LOCATION
Genetic locus: GAL3ST4 (human) mapping to 7q22.1.

PRODUCT
GAL3ST4 shRNA Plasmid (h) is a pool of 3 target-specific lentiviral vector plasmids each encoding 19-25 nt (plus hairpin) shRNAs designed to knock down gene expression. Each plasmid contains a puromycin resistance gene for the selection of cells stably expressing shRNA. Each vial contains 20 µg of lyophilized shRNA plasmid DNA. Suitable for up to 20 transfections. Also see GAL3ST4 siRNA (h): sc-89662 and GAL3ST4 shRNA (h) Lentiviral Particles: sc-89662-V as alternate gene silencing products.

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