

# ABCA5 siRNA (h): sc-94206

## BACKGROUND

ABCA5 (ATP-binding cassette, sub-family A (ABC1), member 5) is a 1,642 amino acid protein belonging to the ABC transporter superfamily and the ABCA family. The ABC1 subfamily is the only major ABC subfamily exclusive to multicellular eukaryotes. Ubiquitously expressed, with high expression in testis, skeletal muscle, kidney, liver and placenta, ABCA5 is a multi-pass membrane protein that contains two ABC transporter domains and exists as three alternatively spliced isoforms. ABCA5 exhibits membrane subcellular localization and may play a role in processing autolysosomes. Spanning 80 kb, ABCA5 contains 39 exons, with exon 2 containing the putative translation start site. ABCA5 is the first of five ABC1 family members that maps to human chromosome 17q24.3. ABCA5 is linked to lysosomal diseases and may play a role in tumor development and cardiomyocyte and follicular cell activities. ABCA5 might also be a specific urine marker for diagnosis of patients with high-grade prostatic intraepithelial neoplasia (HGPIN).

## REFERENCES

- Allikmets, R., et al. 1996. Characterization of the human ABC superfamily: isolation and mapping of 21 new genes using the expressed sequence tags database. *Hum. Mol. Genet.* 5: 1649-1655.
- Nagase, T., et al. 2001. Prediction of the coding sequences of unidentified human genes. XXI. The complete sequences of 60 new cDNA clones from brain which code for large proteins. *DNA Res.* 8: 179-187.
- Petry, F., et al. 2003. Cloning of human and rat ABCA5/Abca5 and detection of a human splice variant. *Biochem. Biophys. Res. Commun.* 300: 343-350.
- Ohtsuki, S., et al. 2004. mRNA expression of the ATP-binding cassette transporter subfamily A (ABCA) in rat and human brain capillary endothelial cells. *Biol. Pharm. Bull.* 27: 1437-1440.
- Kubo, Y., et al. 2005. ABCA5 resides in lysosomes, and ABCA5 knockout mice develop lysosomal disease-like symptoms. *Mol. Cell. Biol.* 25: 4138-4149.

## CHROMOSOMAL LOCATION

Genetic locus: ABCA5 (human) mapping to 17q24.3.

## PRODUCT

ABCA5 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  $\mu$ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see ABCA5 shRNA Plasmid (h): sc-94206-SH and ABCA5 shRNA (h) Lentiviral Particles: sc-94206-V as alternate gene silencing products.

For independent verification of ABCA5 (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-94206A, sc-94206B and sc-94206C.

## PROTOCOLS

See our web site at [www.scbt.com](http://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  $\mu$ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330  $\mu$ l of RNase-free water makes a 10  $\mu$ M solution in a 10  $\mu$ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

## APPLICATIONS

ABCA5 siRNA (h) is recommended for the inhibition of ABCA5 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  $\mu$ M in 66  $\mu$ 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.

## RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor ABCA5 gene expression knockdown using RT-PCR Primer: ABCA5 (h)-PR: sc-94206-PR (20  $\mu$ 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.