SANTA CRUZ BIOTECHNOLOGY, INC.

HAO2 siRNA (h): sc-78639

BACKGROUND

HAO2 (hydroxyacid oxidase 2), also known as GIG16, cell growth-inhibiting gene 16 protein, long chain α-hydroxy acid oxidase or (S)-2-hydroxy-acid oxidase, peroxisomal, is a 351 amino acid protein that belongs to the FMN-dependent α-hydroxy acid dehydrogenase family. Containing an FMN hydroxy acid dehydrogenase domain, HAO2 utilizes FMN as a cofactor and catalyzes the oxidation of L-α-hydroxy acids and L-α-amino acids. Localizing to the peroxisome, HAO2 is expressed in liver and kidney. The gene encoding HAO2 maps to human chromosome 1p12, and is one of three related genes, including HAO1 and HAO3, that differ in sequence and expression, but contain 2-hydroxyacid oxidase activity. HAO1 is thought to play a role in the pathophysiology of hyperoxaluria type 1, which is caused by defects in AGXT, a peroxisomal enzyme, leading to accumulation of glyoxylate.

REFERENCES

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3. Recalcati, S., Tacchini, L., Alberghini, A., Conte, D. and Cairo, G. 2003. Oxidative stress-mediated down-regulation of rat hydroxyacid oxidase 1, a liver-specific peroxisomal enzyme. Hepatology 38: 1159-1166.
4. Gregory, S.G., Barlow, K.F., McLay, K.E., Kaul, R., Swarbreck, D., Dunham, A., Scott, C.E., Howe, K.L., Woodfine, K., Spencer, C.C., Jones, M.C., Gillson, C., Searle, S., Zhou, Y., Kokocinski, F., McDonald, L., Evans, R., et al. 2006. The DNA sequence and biological annotation of human chromosome 1. Nature 441: 315-321.
5. Guey, L.T., García-Closas, M., Murta-Nascimento, C., Lloreta, J., Palencia, L., Kogevinas, M., Rothman, N., Vellalta, G., Calle, M.L., Marenne, G., Tardón, A., Carrato, A., García-Closas, R., Serra, C., Silverman, D.T., et al. 2010. Genetic susceptibility to distinct bladder cancer subphenotypes. Eur. Urol. 57: 283-292.

CHROMOSOMAL LOCATION

Genetic locus: HAO2 (human) mapping to 1p12.

PRODUCT

HAO2 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see HAO2 shRNA Plasmid (h): sc-78639-SH and HAO2 shRNA (h) Lentiviral Particles: sc-78639-V as alternate gene silencing products.

For independent verification of HAO2 (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-78639A, sc-78639B and sc-78639C.

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

HAO2 siRNA (h) is recommended for the inhibition of HAO2 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 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 HAO2 gene expression knockdown using RT-PCR Primer: HAO2 (h)-PR: sc-78639-PR (20 µl). 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.

PROTOCOLS

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