SANTA CRUZ BIOTECHNOLOGY, INC.

STAMP2 siRNA (h): sc-89820

BACKGROUND

STAMP2 (SixTransMembrane protein of prostate 2), also known as STEAP4 (STEAP family member 4), TIARP or TNFAIP9, is a 459 amino acid multi-pass membrane protein that localizes to the golgi apparatus and contains one ferric oxidoreductase domain. Expressed ubiquitously with highest expression in lung, prostate, placenta and heart, STAMP2 functions as a metalloreductase that uses FAD as a cofactor to reduce both Fe^{3+} and Cu^{2+} to Fe^{2+} and Cu^{1+}, respectively. Multiple isoforms of STAMP2 exist due to alternative splicing events. The gene encoding STAMP2 maps to human chromosome 7, which houses over 1,000 genes and comprises nearly 5% of the human genome. Defects in some of the genes localized to chromosome 7 have been linked to osteogenesis imperfecta, Williams-Beuren syndrome, Pendred syndrome, lissencephaly, citrullinemia and Shwachman-Diamond syndrome.

REFERENCES

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2. Korkmaz, C.G., Korkmaz, K.S., Kurys, P., Elbi, C., Wang, L., Klokk, T.I., Hammarstrom, C., Troen, G., Svindland, A., Hager, G.L. and Saatcioglu, F. 2005. Molecular cloning and characterization of STAMP2, an androgen-regulated six transmembrane protein that is overexpressed in prostate cancer. Oncogene 24: 4934-4945.
3. Ohgami, R.S., Campagna, D.R., McDonald, A. and Fleming, M.D. 2006. The Steap proteins are metalloreductases. Blood 108: 1388-1394.
4. Online Mendelian Inheritance in Man, OMIM™. 2007. Johns Hopkins University, Baltimore, MD. MIM Number: 611098. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
5. Zhang, C.M., Chi, X., Wang, B., Zhang, M., Ni, Y.H., Chen, R.H., Li, X.N. and Guo, X.R. 2008. Downregulation of STEAP4, a highly-expressed TNF-α-inducible gene in adipose tissue, is associated with obesity in humans. Acta Pharmacol. Sin. 29: 587-592.

CHROMOSOMAL LOCATION

Genetic locus: STEAP4 (human) mapping to 7q21.12.

PRODUCT

STAMP2 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 STAMP2 shRNA Plasmid (h): sc-89820-SH and STAMP2 shRNA (h) Lentiviral Particles: sc-89820-V as alternate gene silencing products.

For independent verification of STAMP2 (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-89820A, sc-89820B and sc-89820C.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

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

STAMP2 siRNA (h) is recommended for the inhibition of STAMP2 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 STAMP2 gene expression knockdown using RT-PCR Primer: STAMP2 (h)-PR: sc-89820-PR (20 µl, 476 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Kim, H.Y., Kwon, W.Y., Park, J.B., Lee, M.H., Oh, Y.J., Suh, S., Baek, Y.H., Jeong, J.S. and Yoo, Y.H. 2020. Hepatic STAMP2 mediates recombinant FGF21-induced improvement of hepatic iron overload in nonalcoholic fatty liver disease. FASEB J. 34: 12354-12366.

PROTOCOLS

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