SANTA CRUZ BIOTECHNOLOGY, INC.

BIGM103 siRNA (h): sc-89083

BACKGROUND

BIGM103 (BCG-induced integral membrane protein in monocyte clone 103 protein), also known as zinc transporter ZIP8 or solute carrier family 39 member 8, is a 460 amino acid protein belonging to the ZIP transporter family. While other members of the protein family are constitutively expressed, BIGM103 is induced by inflammatory cytokines, such as TNFα. Upon induction, BIGM103 translocates to the plasma membrane and mitochondria, where it functions in the cellular import of zinc. As zinc is an essential cytoprotectant involved in the host response to inflammatory stress, BIGM103, too, functions as a cytoprotectant and plays a critical role in cell survival. Additionally, BIGM103 is thought to be the primary transporter of cadmium. BIGM103 is expressed in thymus, placenta, lung and liver, with highest levels in pancreas. Two isoforms of BIGM103 exist as a result of alternative splicing events.

REFERENCES

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2. Taylor, K.M. and Nicholson, R.I. 2003. The LZT proteins; the LIV-1 subfamily of zinc transporters. Biochim. Biophys. Acta 1611: 16-30.
3. Dalton, T.P., et al. 2005. Identification of mouse SLC39A8 as the transporter responsible for cadmium-induced toxicity in the testis. Proc. Natl. Acad. Sci. USA 102: 3401-3406.
4. Online Mendelian Inheritance in Man, OMIM™. 2005. Johns Hopkins University, Baltimore, MD. MIM Number: 608732. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
5. He, L., et al. 2006. ZIP8, member of the solute-carrier-39 (SLC39) metal-transporter family: characterization of transporter properties. Mol. Pharmacol. 70: 171-180.
6. Besecker, B., et al. 2008. The human zinc transporter SLC39A8 (Zip8) is critical in zinc-mediated cytoprotection in lung epithelia. Am. J. Physiol. Lung Cell. Mol. Physiol. 294: L1127-L1136.
7. Satarug, S., et al. 2008. Prevention of cadmium accumulation in retinal pigment epithelium with manganese and zinc. Exp. Eye Res. 87: 587-593.

CHROMOSOMAL LOCATION

Genetic locus: SLC39A8 (human) mapping to 4q24.

PRODUCT

BIGM103 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 BIGM103 shRNA Plasmid (h): sc-89083-SH and BIGM103 shRNA (h) Lentiviral Particles: sc-89083-V as alternate gene silencing products.

For independent verification of BIGM103 (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-89083A, sc-89083B and sc-89083C.

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

BIGM103 siRNA (h) is recommended for the inhibition of BIGM103 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 BIGM103 gene expression knockdown using RT-PCR Primer: BIGM103 (h)-PR: sc-89083-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.