SANTA CRUZ BIOTECHNOLOGY, INC.

BSX siRNA (h): sc-96305

BACKGROUND

BSX (brain-specific homeobox), also known as BSX1, is a 233 amino acid highly conserved protein that localizes to the nucleus and is a member of the distal-less homeobox family. BSX is a DNA binding protein that functions as a transcriptional activator and is essential for normal postnatal growth and nursing. BSX is a master regulator for the hypothalamic expression of key orexigenic neuropeptide Y (NPY) and agouti-related peptide (AGRP) function. Expressed in the dorsomedial and arcuate nucleus (ARC) of the hypothalamus, BSX is regulated by afferent signals in response to peripheral energy balance. Containing a homeobox DNA-binding domain, BSX may be involved in the pathogenesis of leptin resistance. The gene encoding BSX maps to human chromosome 11q24.1, which houses over 1,400 genes and comprises nearly 4% of the human genome.

REFERENCES

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2. Sakkou, M., et al. 2007. A role for brain-specific homeobox factor BSX in the control of hyperphagia and locomotory behavior. Cell Metab. 5: 450-463.
3. Chu, H.Y. and Ohtoshi, A. 2007. Cloning and functional analysis of hypothalamic homeobox gene Bsx1a and its isoform, Bsx1b. Mol. Cell. Biol. 27: 3743-3749.
4. McArthur, T. and Ohtoshi, A. 2007. A brain-specific homeobox gene, Bsx, is essential for proper postnatal growth and nursing. Mol. Cell. Biol. 27: 5120-5127.
5. Park, S.Y., et al. 2007. REST is a key regulator in brain-specific homeobox gene expression during neuronal differentiation. J. Neurochem. 103: 2565-2574.
6. Nogueiras, R., et al. 2008. BSX, a novel hypothalamic factor linking feeding with locomotor activity, is regulated by energy availability. Endocrinology 149: 3009-3015.
7. Coldren, C.D., et al. 2009. Chromosomal microarray mapping suggests a role for BSX and Neurogranin in neurocognitive and behavioral defects in the 11q terminal deletion disorder (Jacobsen syndrome). Neurogenetics 10: 89-95.

CHROMOSOMAL LOCATION

Genetic locus: BSX (human) mapping to 11q24.1.

PRODUCT

BSX siRNA (h) is a target-specific 19-25 nt siRNA 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 BSX shRNA Plasmid (h): sc-96305-SH and BSX shRNA (h) Lentiviral Particles: sc-96305-V as alternate gene silencing 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 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

BSX siRNA (h) is recommended for the inhibition of BSX 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 BSX gene expression knockdown using RT-PCR Primer: BSX (h)-PR: sc-96305-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.