

SPZ1 siRNA (m): sc-153811

BACKGROUND

SPZ1 (spermatogenic leucine zipper 1), also known as NYD-TSP1, is a 430 amino acid testis specific protein that localizes to the nucleus and cytoplasm. Containing one basic helix-loop-helix (bHLH) domain, SPZ1 is phosphorylated by ERK 1 and ERK 2. SPZ1 is suggested to mediate mitogen-activated protein kinase cell proliferation, transformation and tumorigenesis. SPZ1 is a transcription factor that binds to the DNA sequence 5'-CANNTG-3'(E box) and the G-box motif and may play an important role in the regulation of cell proliferation and differentiation during spermatogenesis. Expressed at high levels in several tumor cell lines, SPZ1 acts as a proto-oncogene, participating in the MAPK signal pathway, and may be a potential therapeutic target in the treatment of Ras-induced tumors.

REFERENCES

1. Hsu, S.H., Shyu, H.W., Hsieh-Li, H.M. and Li, H. 2001. SPZ1, a novel bHLH-Zip protein, is specifically expressed in testis. *Mech. Dev.* 100: 177-187.
2. Sha, J.H., Zhou, Z.M., Li, J.M., Lin, M., Zhu, H., Zhu, H., Zhou, Y.D., Wang, L.L., Wang, Y.Q. and Zhou, K.Y. 2003. Expression of a novel bHLH-Zip gene in human testis. *Asian J. Androl.* 5: 83-88.
3. Hsu, S.H., Hsieh-Li, H.M. and Li, H. 2004. Dysfunctional spermatogenesis in transgenic mice overexpressing bHLH-Zip transcription factor, SPZ1. *Exp. Cell Res.* 294: 185-198.
4. Hrabchak, C. and Varmuza, S. 2004. Identification of the spermatogenic zip protein SPZ1 as a putative protein phosphatase-1 (PP1) regulatory protein that specifically binds the PP1 γ 2 splice variant in mouse testis. *J. Biol. Chem.* 279: 37079-37086.
5. Hsu, S.H., Hsieh-Li, H.M., Huang, H.Y., Huang, P.H. and Li, H. 2005. bHLH-Zip transcription factor SPZ1 mediates mitogen-activated protein kinase cell proliferation, transformation, and tumorigenesis. *Cancer Res.* 65: 4041-4050.
6. Horowitz, E., Zhang, Z., Jones, B.H., Moss, S.B., Ho, C., Wood, J.R., Wang, X., Sammel, M.D. and Strauss, J.F. 2005. Patterns of expression of sperm flagellar genes: early expression of genes encoding axonemal proteins during the spermatogenic cycle and shared features of promoters of genes encoding central apparatus proteins. *Mol. Hum. Reprod.* 11: 307-317.

CHROMOSOMAL LOCATION

Genetic locus: Spz1 (mouse) mapping to 13 C3.

PRODUCT

SPZ1 siRNA (m) 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see SPZ1 shRNA Plasmid (m): sc-153811-SH and SPZ1 shRNA (m) Lentiviral Particles: sc-153811-V as alternate gene silencing products.

For independent verification of SPZ1 (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-153811A, sc-153811B and sc-153811C.

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 μ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330 μ l of RNase-free water makes a 10 μ M solution in a 10 μ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

SPZ1 siRNA (m) is recommended for the inhibition of SPZ1 expression in mouse 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 μ M in 66 μ 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 SPZ1 gene expression knockdown using RT-PCR Primer: SPZ1 (m)-PR: sc-153811-PR (20 μ 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.

PROTOCOLS

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