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# Haspin siRNA (m): sc-45798

## BACKGROUND

Haspins (haploid germ cell-specific nuclear protein kinase) constitute a protein family containing a distinctive C-terminal kinase domain and a divergent N-terminus. Haspin homologs occur within a diverse group of eukaryotes, including animals, plants and fungi, which suggests an early evolutionary origin. Haspin, a nuclear protein strongly expressed in male germ cells, is responsible for the phosphorylation of Histone H3 at Thr 3. Depletion of Haspin RNA prevents normal alignment of chromosomes at metaphase, suggesting a crucial role for Haspin during chromosome segregation. Expression of Haspin also occurs in adult thymus and bone marrow, with weaker expression in adult prostate, intestine, lung, spleen and lymph node. The gene encoding human Haspin maps to chromosome 17p13.2.

## REFERENCES

1. Tanaka, H., et al. 1999. Identification and characterization of a haploid germ cell-specific nuclear protein kinase (Haspin) in spermatid nuclei and its effects on somatic cells. *J. Biol. Chem.* 274: 17049-17057.
2. Yoshimura, Y., et al. 2001. Nested genomic structure of haploid germ cell specific Haspin gene. *Gene* 267: 49-54.
3. Higgins, J.M., et al. 2001. The Haspin gene: location in an intron of the integrin  $\alpha E$  gene, associated transcription of an integrin  $\alpha E$ -derived RNA and expression in diploid as well as haploid cells. *Gene* 267: 55-69.
4. Higgins, J.M., et al. 2001. Haspin-like proteins: a new family of evolutionarily conserved putative eukaryotic protein kinases. *Protein Sci.* 10: 1677-1684.
5. Tanaka, H., et al. 2001. Cloning and characterization of human Haspin gene encoding haploid germ cell-specific nuclear protein kinase. *Mol. Hum. Reprod.* 7: 211-218.
6. Higgins, J.M., et al. 2003. Structure, function and evolution of Haspin and Haspin-related proteins, a distinctive group of eukaryotic protein kinases. *Cell. Mol. Life Sci.* 60: 446-462.
7. Dai, J., et al. 2005. The kinase Haspin is required for mitotic Histone H3 Thr 3 phosphorylation and normal metaphase chromosome alignment. *Genes Dev.* 19: 472-488.
8. Dai, J. and Higgins, J.M. 2005. Haspin: a mitotic histone kinase required for metaphase chromosome alignment. *Cell Cycle* 4: 665-668.

## CHROMOSOMAL LOCATION

Genetic locus: Gsg2 (mouse) mapping to 11 B4.

## PRODUCT

Haspin 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  $\mu$ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see Haspin shRNA Plasmid (m): sc-45798-SH and Haspin shRNA (m) Lentiviral Particles: sc-45798-V as alternate gene silencing products.

For independent verification of Haspin (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-45798A, sc-45798B and sc-45798C.

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

## APPLICATIONS

Haspin siRNA (m) is recommended for the inhibition of Haspin 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  $\mu$ M in 66  $\mu$ 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 Haspin gene expression knockdown using RT-PCR Primer: Haspin (m)-PR: sc-45798-PR (20  $\mu$ 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](http://www.scbt.com) for detailed protocols and support products.