SANTA CRUZ BIOTECHNOLOGY, INC.

SPAG5 siRNA (m): sc-76546

BACKGROUND

SPAG5 (sperm-associated antigen 5), also known as MAP126, hMAP126, DEEPEST or Astrin, is a 1,193 amino acid protein that is expressed at high levels in testis and at lower levels in liver, placenta, pancreas, colon and thymus. Localized specifically to spindle poles during prophase and throughout the spindle during metaphase and anaphase, SPAG5 is essential for proper spindle formation and is thought to be involved in the dynamic and functional regulation of mitotic spindles. Additionally, SPAG5 plays a role in sister chromatid cohesion and subsequent chromatid separation and, via its association with chromatids, is an important regulator of chromosome integrity. SPAG5 has a long stalk and a globular head domain through which if forms a homodimer that is characterized by aster-like structures. Upon DNA damage, SPAG5 may be phosphorylated by ATR or ATM.

REFERENCES

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2. Shao, X., Xue, J. and van der Hoorn, F.A. 2001. Testicular protein SPAG5 has similarity to mitotic spindle protein Deepest and binds outer dense fiber protein Odf1. Mol. Reprod. Dev. 59: 410-416.
3. Mack, G.J. and Compton, D.A. 2001. Analysis of mitotic microtubule-associated proteins using mass spectrometry identifies astrin, a spindle-associated protein. Proc. Natl. Acad. Sci. USA 98: 14434-14439.
4. Gruber, J., Harborth, J., Schnabel, J., Weber, K. and Hatzfeld, M. 2002. The mitotic spindle-associated protein astrin is essential for progression through mitosis. J. Cell Sci. 115: 4053-4059.
5. Yang, Y.C., Hsu, Y.T., Wu, C.C., Chen, H.T. and Chang, M.S. 2006. Silencing of astrin induces the p53-dependent apoptosis by suppression of HPV18 E6 expression and sensitizes cells to paclitaxel treatment in HeLa cells. Biochem. Biophys. Res. Commun. 343: 428-434.
6. Nousiainen, M., Sillje, H.H., Sauer, G., Nigg, E.A. and Körner, R. 2006. Phosphoproteome analysis of the human mitotic spindle. Proc. Natl. Acad. Sci. USA 103: 5391-5396.

CHROMOSOMAL LOCATION

Genetic locus: Spag5 (mouse) mapping to 11 B5.

PRODUCT

SPAG5 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see SPAG5 shRNA Plasmid (m): sc-76546-SH and SPAG5 shRNA (m) Lentiviral Particles: sc-76546-V as alternate gene silencing products.

For independent verification of SPAG5 (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-76546A, sc-76546B and sc-76546C.

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

SPAG5 siRNA (m) is recommended for the inhibition of SPAG5 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 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 SPAG5 gene expression knockdown using RT-PCR Primer: SPAG5 (m)-PR: sc-76546-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.