SANTA CRUZ BIOTECHNOLOGY, INC.

Repo-Man siRNA (h): sc-76388

BACKGROUND

The eukaryotic cell division cycle consists of a number of gene-controlled sequences that involve cyclin dependent kinases (Cdks) and cell division cycle (Cdc) proteins. Repo-Man, also known as CDCA2 (cell division cycle associated 2), is a 1,024 amino acid protein that localizes to different areas within the nucleus in a phosphrylation-dependent manner. Expressed ubiquitously, Repo-Man functions to regulate mitotic chromosome structure and is specifically required to maintain compact chromosomal architecture in the absence of condensins during anaphase. Due to its ability to maintain proper chromosomal structure and function, Repo-Man plays a key role in cell cycle progression and, if upregulated, may be involved in tumor formation and metastasis. Two isoforms of Repo-Man exist due to alternative splicing events.

REFERENCES

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2. Gassmann, R., Vagnarelli, P., Hudson, D. and Earnshaw, W.C. 2004. Mitotic chromosome formation and the condensin paradox. Exp. Cell Res. 296: 35-42.
3. Belmont, A.S. 2006. Mitotic chromosome structure and condensation. Curr. Opin. Cell Biol. 18: 632-638.
4. Trinkle-Mulcahy, L., Andersen, J., Lam, Y.W., Moorhead, G., Mann, M. and Lamond, A.I. 2006. Repo-Man recruits PP1γ to chromatin and is essential for cell viability. J. Cell Biol. 172: 679-692.
5. Vagnarelli, P., Hudson, D.F., Ribeiro, S.A., Trinkle-Mulcahy, L., Spence, J.M., Lai, F., Farr, C.J., Lamond, A.I. and Earnshaw, W.C. 2006. Condensin and Repo-Man-PP1 cooperate in the regulation of chromosome architecture during mitosis. Nat. Cell Biol. 8: 1133-1142.
6. Nousiainen, M., Silljé, 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: CDCA2 (human) mapping to 8p21.2.

PRODUCT

Repo-Man 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 Repo-Man shRNA Plasmid (h): sc-76388-SH and Repo-Man shRNA (h) Lentiviral Particles: sc-76388-V as alternate gene silencing products.

For independent verification of Repo-Man (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-76388A, sc-76388B and sc-76388C.

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

Repo-Man siRNA (h) is recommended for the inhibition of Repo-Man 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 Repo-Man gene expression knockdown using RT-PCR Primer: Repo-Man (h)-PR: sc-76388-PR (20 µl, 446 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Zhang, Y., Cheng, Y., Zhang, Z., Bai, Z., Jin, H., Guo, X., Huang, X., Li, M., Wang, M., Shu, X.S., Yuan, Y. and Ying, Y. 2020. CDCA2 inhibits apoptosis and promotes cell proliferation in prostate cancer and is directly regulated by HIF-1α pathway. Front. Oncol. 10: 725.

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.