SANTA CRUZ BIOTECHNOLOGY, INC.

HAUSP siRNA (h): sc-41521

BACKGROUND

HAUSP (herpesvirus-associated ubiquitin-specific protease, USP7) is a ubiquitin-specific protease. HAUSP localizes predominantly to the nucleus, in a TD-dependent manner, where it associates with ND10. ND10 are small nuclear structures implicated in a variety of cellular processes including response to stress and interferons, oncogenesis, and viral infection. HAUSP binds strongly to Vmw110, a herpesvirus regulatory protein which has the ability to disrupt ND10. HAUSP, a novel p53-interacting protein, functions to deubiquitinize p53 in an important pathway for p53 stabilization. HAUSP strongly stabilizes p53 even in the presence of excess Mdm2, and also induces p53-dependent cell growth repression and apoptosis. The HAUSP protein is distributed in the nucleus in a micropunctate pattern with a limited number of larger discrete foci, some of which co-localize with PML in ND10. The gene encoding HAUSP maps to human chromosome band 16p13.2.

CHROMOSOMAL LOCATION

Genetic locus: USP7 (human) mapping to 16p13.2.

PRODUCT

HAUSP 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 HAUSP shRNA Plasmid (h): sc-41521-SH and HAUSP shRNA (h) Lentiviral Particles: sc-41521-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

HAUSP siRNA (h) is recommended for the inhibition of HAUSP 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.

GENE EXPRESSION MONITORING

HAUSP (H-12): sc-137008 is recommended as a control antibody for monitoring of HAUSP gene expression knockdown by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) or immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor HAUSP gene expression knockdown using RT-PCR Primer: HAUSP (h)-PR: sc-41521-PR (20 µl, 480 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Hu, B., et al. 2014. HSCARG, a novel regulator of H2A ubiquitination by downregulating PRC1 ubiquitin E3 ligase activity, is essential for cell proliferation. Nucleic Acids Res. 42: 5582-5593.
2. Bhattacharya, S. and Ghosh, M.K. 2014. HAUSP, a novel deubiquitinase for Rb-MDM2 the critical regulator. FEBS J. 281: 3061-3078.
3. Bhattacharya, S. and Ghosh, M.K. 2015. HAUSP regulates c-Myc expression via de-ubiquitination of TRRAP. Cell. Oncol. 38: 265-277.
4. Xia, X., et al. 2019. Deubiquitination and stabilization of estrogen receptor α by ubiquitin-specific protease 7 promotes breast tumorigenesis. Cancer Lett. 465: 118-128.
5. Liao, Y., et al. 2019. USP10 modulates the SKP2/Bcr-Abl axis via stabilizing SKP2 in chronic myeloid leukemia. Cell Discov. 5: 24.
6. de la Vega, E., et al. 2020. Usp7-dependent control of myogenin stability is required for terminal differentiation in skeletal muscle progenitors. FEBS J. 287: 4659-4677.
7. Basu, B., et al. 2023. USP7 imparts partial EMT state in colorectal cancer by stabilizing the RNA helicase DDX3X and augmenting Wnt/β-catenin signaling. Biochim. Biophys. Acta Mol. Cell Res. 1870: 119446.
8. Shin, S.C., et al. 2023. Structural and functional characterization of USP47 reveals a hot spot for inhibitor design. Commun. Biol. 6: 970.
9. Zhang, K., et al. 2023. Inhibition of USP7 upregulates USP22 and activates its downstream cancer-related signaling pathways in human cancer cells. Cell Commun. Signal. 21: 319.

RESEARCH USE

For research use only, not for use in diagnostic procedures.