SANTA CRUZ BIOTECHNOLOGY, INC.

USP21 siRNA (m): sc-76826

BACKGROUND

The ubiquitin (Ub) pathway involves three sequential enzymatic steps that facilitate the conjugation of Ub and Ub-like molecules to specific protein substrates. Through the use of a wide range of enzymes that can add or remove ubiquitin, the Ub pathway controls many intracellular processes such as signal transduction, transcriptional activation and cell cycle progression. USP21 (ubiquitin specific peptidase 21), also known as USP16 or USP23, is a 565 amino acid protein that belongs to the C19 peptidase family of ubiquitin carboxy-terminal hydrolases. Capable of removing ubiquitin from ubiquitinated proteins, USP21 plays a role in signal transduction and can also remove NEDD8 from NEDD8-conjugated proteins, possibly functioning to influence NEDD8-mediated protein proteolysis. Multiple isoforms of USP21 exist due to alternative splicing events.

REFERENCES

1. Yin, L., et al. 2000. Nonhydrolyzable diubiquitin analogues are inhibitors of ubiquitin conjugation and deconjugation. Biochemistry 39: 10001-10010.
2. Smith, T.S. and Southan, C. 2000. Sequencing, tissue distribution and chromosomal assignment of a novel ubiquitin-specific protease USP23. Biochim. Biophys. Acta 1490: 184-188.
3. Gong, L., et al. 2000. Identification of a novel isopeptidase with dual specificity for ubiquitin- and NEDD8-conjugated proteins. J. Biol. Chem. 275: 14212-14216.
4. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 604729. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
5. Ismail, A. and Nawaz, Z. 2005. Nuclear hormone receptor degradation and gene transcription: an update. IUBMB Life 57: 483-490.
6. Joo, H.Y., et al. 2007. Regulation of cell cycle progression and gene expression by H2A deubiquitination. Nature 449: 1068-1072.

CHROMOSOMAL LOCATION

Genetic locus: Usp21 (mouse) mapping to 1 H3.

PRODUCT

USP21 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 USP21 shRNA Plasmid (m): sc-76826-SH and USP21 shRNA (m) Lentiviral Particles: sc-76826-V as alternate gene silencing products.

For independent verification of USP21 (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-76826A, sc-76826B and sc-76826C.

PROTOCOLS

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

USP21 siRNA (m) is recommended for the inhibition of USP21 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.

GENE EXPRESSION MONITORING

USP21 (B-9): sc-515911 is recommended as a control antibody for monitoring of USP21 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 USP21 gene expression knockdown using RT-PCR Primer: USP21 (m)-PR: sc-76826-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.