SANTA CRUZ BIOTECHNOLOGY, INC.

USP1 siRNA (m): sc-106677

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. USP1 (ubiquitin specific peptidase 1), also known as UBP, ubiquitin carboxyl-terminal hydrolase 1, ubiquitin thioesterase 1 or deubiquitinating enzyme 1, is a 785 amino acid that belongs to the peptidase C19 family of ubiquitin carboxy-terminal hydrolases. A negative regulator of DNA damage repair, USP1 specifically deubiquitinates FANCD2 in the DNA repair pathway. Following DNA damage, autocatalytic cleavage of USP1 leads to an increase in ubiquitinated PCNA and the recruitment of POL H. Multiple isoforms of USP1 exist due to alternative splicing events.

REFERENCES

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CHROMOSOMAL LOCATION

Genetic locus: Usp1 (mouse) mapping to 4 C6.

RESEARCH USE

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

PRODUCT

USP1 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 USP1 shRNA Plasmid (m): sc-106677-SH and USP1 shRNA (m) Lentiviral Particles: sc-106677-V as alternate gene silencing products.

For independent verification of USP1 (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-106677A, sc-106677B and sc-106677C.

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

USP1 siRNA (m) is recommended for the inhibition of USP1 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 USP1 gene expression knockdown using RT-PCR Primer: USP1 (m)-PR: sc-106677-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

PROTOCOLS

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