

USP11 siRNA (h): sc-63193

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. USP11 (ubiquitin specific peptidase 11), also known as UHX1, is a 920 amino acid deubiquitinating enzyme that participates in the Ub pathway. Localized to the nucleus, USP11 associates with both Ran BP-M (Ran binding protein M) and with the tumor suppressor BRCA2. Through these associations, USP11 functions to either inhibit ubiquitination of these proteins or to remove ubiquitin residues that have already been attached to these proteins. USP11 is implicated in several X-linked retinal diseases and, due to its ability to deubiquitinate BRCA2, may play a role in tumor suppression.

REFERENCES

- Swanson, D.A., et al. 1996. A ubiquitin C-terminal hydrolase gene on the proximal short arm of the X chromosome: implications for X-linked retinal disorders. *Hum. Mol. Genet.* 5: 533-538.
- Brandau, O., et al. 1998. UHX1 and PCTK1: precise characterisation and localisation within a gene-rich region in Xp11.23 and evaluation as candidate genes for retinal diseases mapped to Xp21.1-p11.2. *Eur. J. Hum. Genet.* 6: 459-466.
- Ideguchi, H., et al. 2002. Structural and functional characterization of the USP11 deubiquitinating enzyme, which interacts with the RanGTP-associated protein RanBPM. *Biochem. J.* 367: 87-95.

CHROMOSOMAL LOCATION

Genetic locus: USP11 (human) mapping to Xp11.23.

PRODUCT

USP11 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see USP11 shRNA Plasmid (h): sc-63193-SH and USP11 shRNA (h) Lentiviral Particles: sc-63193-V as alternate gene silencing products.

For independent verification of USP11 (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-63193A, sc-63193B and sc-63193C.

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 μ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330 μ l of RNase-free water makes a 10 μ M solution in a 10 μ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

USP11 siRNA (h) is recommended for the inhibition of USP11 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 μ M in 66 μ l. 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

USP11 (C-6): sc-365528 is recommended as a control antibody for monitoring of USP11 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-IgG κ BP-HRP: sc-516102 or m-IgG κ 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-IgG κ BP-FITC: sc-516140 or m-IgG κ 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 USP11 gene expression knockdown using RT-PCR Primer: USP11 (h)-PR: sc-63193-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

- Jacko, A.M., et al. 2016. De-ubiquitinating enzyme, USP11, promotes transforming growth factor β -1 signaling through stabilization of transforming growth factor β receptor II. *Cell Death Dis.* 7: e2474.
- Li, S., et al. 2018. The deubiquitinating enzyme USP48 stabilizes TRAF2 and reduces E-cadherin-mediated adherens junctions. *FASEB J.* 32: 230-242.
- Tomicic, M.T., et al. 2019. Functional mismatch repair and inactive p53 drive sensitization of colorectal cancer cells to irinotecan via the IAP antagonist BV6. *Arch. Toxicol.* 93: 2265-2277.

RESEARCH USE

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