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# DUB3 siRNA (m): sc-143189

## 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. DUB3 (deubiquitinating enzyme 3), also known as Dub6 (deubiquitinating protein 6) or Usp17l2 (ubiquitin carboxyl-terminal hydrolase 17-like protein 2), is a 540 amino acid nuclear protein that belongs to the peptidase C19 family and USP17 subfamily. As a deubiquitinating enzyme, DUB3 plays an essential role in cell cycle regulation by removing conjugated ubiquitin from Cdc25A, thereby preventing its proteasomal degradation. DUB3 is encoded by a gene that maps to murine chromosome 7 E3.

## REFERENCES

1. Zhu, Y., et al. 1996. The murine DUB-1 gene is specifically induced by the  $\beta$ c subunit of interleukin-3 receptor. *Mol. Cell. Biol.* 16: 4808-4817.
2. Zhu, Y., et al. 1997. DUB-2 is a member of a novel family of cytokine-inducible deubiquitinating enzymes. *J. Biol. Chem.* 272: 51-57.
3. Baek, K.H. 2003. Conjugation and deconjugation of ubiquitin regulating the destiny of proteins. *Exp. Mol. Med.* 35: 1-7.
4. Puente, X.S., et al. 2003. Human and mouse proteases: a comparative genomic approach. *Nat. Rev. Genet.* 4: 544-558.
5. Burrows, J.F., et al. 2004. DUB-3, a cytokine-inducible deubiquitinating enzyme that blocks proliferation. *J. Biol. Chem.* 279: 13993-14000.
6. Baek, K.H. 2006. Cytokine-regulated protein degradation by the ubiquitination system. *Curr. Protein Pept. Sci.* 7: 171-177.
7. Pereg, Y., et al. 2010. Ubiquitin hydrolase Dub3 promotes oncogenic transformation by stabilizing Cdc25A. *Nat. Cell Biol.* 12: 400-406.

## CHROMOSOMAL LOCATION

Genetic locus: Dub3 (mouse) mapping to 7 E3.

## PRODUCT

DUB3 siRNA (m) is a pool of 2 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  $\mu$ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see DUB3 shRNA Plasmid (m): sc-143189-SH and DUB3 shRNA (m) Lentiviral Particles: sc-143189-V as alternate gene silencing products.

For independent verification of DUB3 (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-143189A and sc-143189B.

## PROTOCOLS

See our web site at [www.scbt.com](http://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  $\mu$ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330  $\mu$ l of RNase-free water makes a 10  $\mu$ M solution in a 10  $\mu$ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

## APPLICATIONS

DUB3 siRNA (m) is recommended for the inhibition of DUB3 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  $\mu$ M in 66  $\mu$ 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.

## RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor DUB3 gene expression knockdown using RT-PCR Primer: DUB3 (m)-PR: sc-143189-PR (20  $\mu$ l). 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.