SANTA CRUZ BIOTECHNOLOGY, INC.

OTUB2 siRNA (m): sc-76017

BACKGROUND

The modification of cellular proteins by the covalent attachment of ubiquitin is important for various biological processes which include signal transduction, cell cycle progression and stress response. Ubiquitylation can be reversed and regulated by a family of proteases called deubiquitylating enzymes (DUBs). The otubains family of DUBs belong to the ovarian tumour (OTU) superfamily of proteins. OTUB2 (OTU domain, ubiquitin aldehyde binding 2), also known as OTB2, OTU2 or Otubain-2, is a 234 amino acid protein that contains one OTU (ovarian tumor) domain. OTUB2 is ubiquitously expressed with higher expression levels in the brain. OTUB2 functions as a hydrolase that can remove ubiquitin residues from target proteins, thereby preventing protein degradation and playing an important role in protein turnover. Two isoforms exist due to alternative splicing events.

REFERENCES

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2. Balakirev, M.Y., et al. 2003. Otubains: a new family of cysteine proteases in the ubiquitin pathway. EMBO Rep. 4: 517-522.
3. Nanao, M.H., et al. 2004. Crystal structure of human Otubain-2. EMBO Rep. 5: 783-788.
4. Soares, L., et al. 2004. Two isoforms of Otubain-1 regulate T cell anergy via GRAIL. Nat. Immunol. 5: 45-54.
5. Komander, D., et al. 2008. Structure of the A20 OTU domain and mechanistic insights into deubiquitination. Biochem. J. 409: 77-85.
6. Messick, T.E., et al. 2008. Structural basis for ubiquitin recognition by the OTU1 ovarian tumor domain protein. J. Biol. Chem. 283: 11038-11049.
7. Aquea, F., et al. 2008. A novel Otubain-like cysteine protease gene is preferentially expressed during somatic embryogenesis in *Pinus radiata*. Mol. Biol. Rep. 35: 567-573.
8. Edelmann, M.J., et al. 2009. Structural basis and specificity of human Otubain-1-mediated deubiquitination. Biochem. J. 418: 379-390.

CHROMOSOMAL LOCATION

Genetic locus: Otub2 (mouse) mapping to 12 E.

PRODUCT

OTUB2 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 OTUB2 shRNA Plasmid (m): sc-76017-SH and OTUB2 shRNA (m) Lentiviral Particles: sc-76017-V as alternate gene silencing products.

For independent verification of OTUB2 (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-76017A, sc-76017B and sc-76017C.

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

OTUB2 siRNA (m) is recommended for the inhibition of OTUB2 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 OTUB2 gene expression knockdown using RT-PCR Primer: OTUB2 (m)-PR: sc-76017-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.

PROTOCOLS

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