

UBTD1 siRNA (h): sc-90329

BACKGROUND

Ubiquitin (Ub) is among the most phylogenetically conserved proteins known. The primary function of this small, 76 amino acid protein is to clear abnormal, foreign and improperly folded proteins by targeting them for degradation by the 26S proteasome. Many ubiquitin-like proteins function as post-translational protein modifiers, such as members of the SUMO protein family, however some ubiquitin-like proteins regulate protein-protein interactions and cell cycle events, thereby functioning outside of the traditional ubiquitination pathway. UBTD1 (ubiquitin domain-containing protein 1) is a 227 amino acid protein containing one C-terminal Ubiquitin-like (UBQ) domain. With only one UBQ domain, it is likely that UBTD1 is capable of conjugation to other proteins and mostly functions in similar ways to ubiquitin in the modification of post-translational proteins.

REFERENCES

1. Hochstrasser, M. 1996. Ubiquitin-dependent protein degradation. *Annu. Rev. Genet.* 30: 405-439.
2. Ciechanover, A. and Schwartz, A.L. 1998. The ubiquitin-proteasome pathway: the complexity and myriad functions of proteins death. *Proc. Natl. Acad. Sci. USA* 95: 2727-2730.
3. Conklin, D., Holderman, S., Whitmore, T.E., Maurer, M. and Feldhaus, A.L. 2000. Molecular cloning, chromosome mapping and characterization of UBQLN3 a testis-specific gene that contains an ubiquitin-like domain. *Gene* 249: 91-98.
4. Su, H.L. and Li, S.S. 2002. Molecular features of human ubiquitin-like SUMO genes and their encoded proteins. *Gene* 296: 65-73.
5. Glickman, M.H. and Ciechanover, A. 2002. The ubiquitin-proteasome proteolytic pathway: destruction for the sake of construction. *Physiol. Rev.* 82: 373-428.
6. Hjerpe, R. and Rodríguez, M.S. 2008. Efficient approaches for characterizing ubiquitinated proteins. *Biochem. Soc. Trans.* 36: 823-827.
7. Edelmann, M.J. and Kessler, B.M. 2008. Ubiquitin and ubiquitin-like specific proteases targeted by infectious pathogens: emerging patterns and molecular principles. *Biochim. Biophys. Acta* 1782: 809-816.

CHROMOSOMAL LOCATION

Genetic locus: UBTD1 (human) mapping to 10q24.1.

PRODUCT

UBTD1 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 UBTD1 shRNA Plasmid (h): sc-90329-SH and UBTD1 shRNA (h) Lentiviral Particles: sc-90329-V as alternate gene silencing products.

For independent verification of UBTD1 (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-90329A, sc-90329B and sc-90329C.

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

UBTD1 siRNA (h) is recommended for the inhibition of UBTD1 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

UBTD1 (189CT14.5.4): sc-517372 is recommended as a control antibody for monitoring of UBTD1 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 UBTD1 gene expression knockdown using RT-PCR Primer: UBTD1 (h)-PR: sc-90329-PR (20 μ 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.

PROTOCOLS

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