

# UBE2G2 siRNA (h): sc-76788

## BACKGROUND

UBE2G2 (ubiquitin-conjugating enzyme E2 G2), also known as UBC7, is a 165 amino acid protein involved in ubiquitin-mediated protein degradation. Ubiquitination is an important mechanism through which three classes of enzymes act in concert to target short-lived or abnormal proteins for destruction. The three classes of enzymes involved in ubiquitination are the ubiquitin-activating enzymes (E1s), the ubiquitin-conjugating enzymes (E2s) and the ubiquitin-protein ligases (E3s). UBE2G2 is an E2 ubiquitin-conjugating enzyme that acts to catalyze the covalent attachment of ubiquitins to various proteins. Expressed throughout the body, UBE2G2 shares 100% sequence identity with its mouse counterpart and is thought to be involved in endoplasmic reticulum-associated degradation (ERAD). Two isoforms of UBE2G2 exist due to alternative splicing events.

## REFERENCES

1. Katsanis, N. and Fisher, E.M. 1998. Identification, expression, and chromosomal localization of ubiquitin conjugating enzyme 7 (UBE2G2), a human homologue of the *Saccharomyces cerevisiae* Ubc7 gene. *Genomics* 51: 128-131.
2. Webster, J.M., et al. 2003. Inositol 1,4,5-trisphosphate receptor ubiquitination is mediated by mammalian UBC7, a component of the endoplasmic reticulum-associated degradation pathway, and is inhibited by chelation of intracellular Zn<sup>2+</sup>. *J. Biol. Chem.* 278: 38238-38246.
3. Kim, B.W., et al. 2003. Endoplasmic reticulum-associated degradation of the human type 2 iodothyronine deiodinase (D2) is mediated via an association between mammalian UBC7 and the carboxyl region of D2. *Mol. Endocrinol.* 17: 2603-2612.
4. Reyes, L.F., et al. 2006. Expression, purification, and structural analysis of (HIS)UBE2G2 (human ubiquitin-conjugating enzyme). *Protein Expr. Purif.* 45: 324-328.
5. Chen, B., et al. 2006. The activity of a human endoplasmic reticulum-associated degradation E3, GP78, requires its Cue domain, RING finger, and an E2-binding site. *Proc. Natl. Acad. Sci. USA* 103: 341-346.

## CHROMOSOMAL LOCATION

Genetic locus: UBE2G2 (human) mapping to 21q22.3.

## PRODUCT

UBE2G2 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  $\mu$ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see UBE2G2 shRNA Plasmid (h): sc-76788-SH and UBE2G2 shRNA (h) Lentiviral Particles: sc-76788-V as alternate gene silencing products.

For independent verification of UBE2G2 (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-76788A, sc-76788B and sc-76788C.

## RESEARCH USE

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

## 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

UBE2G2 siRNA (h) is recommended for the inhibition of UBE2G2 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  $\mu$ 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.

## GENE EXPRESSION MONITORING

UBE2G2 (D-4): sc-393780 is recommended as a control antibody for monitoring of UBE2G2 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 (secondary) reagents are recommended: 1) Western Blotting: use goat anti-mouse IgG-HRP: sc-2005 (dilution range: 1:2000-1:32,000) or Cruz Marker™ compatible goat anti-mouse IgG-HRP: sc-2031 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use goat anti-mouse IgG-FITC: sc-2010 (dilution range: 1:100-1:400) or goat anti-mouse IgG-TR: sc-2781 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

## RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor UBE2G2 gene expression knockdown using RT-PCR Primer: UBE2G2 (h)-PR: sc-76788-PR (20  $\mu$ l). 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](http://www.scbt.com) or our catalog for detailed protocols and support products.