SANTA CRUZ BIOTECHNOLOGY, INC.

# HERPUD2 siRNA (h): sc-89623

## BACKGROUND

The endoplasmic reticulum (ER) stress response is triggered by the accumulation of unfolded proteins within the ER and is characterized by three events: the inhibition of translation (to prevent further protein accumulation), the up-regulated expression of polypeptide-folding proteins (known as the unfolded protein response or UPR) and the degradation of misfolded proteins by the ER-associated protein degradation (ERAD) system. Members of the homocysteine-inducible and ER stress-inducible ubiquitin-like domain families are components of the ERAD system and, via their ubiquitin-like domain, are thought to be involved in the destruction of misfolded proteins. HERPUD2 (Homocysteine-responsive endoplasmic reticulum-resident ubiquitin-like domain member 2) is a 406 amino acid single-pass membrane protein containing one N-terminal ubiquitin-like domain. HERPUD2 is thought to be involved in the unfolded protein response (UPR) pathway.

## REFERENCES


1. van Laar, T., et al. 2000. The novel MMS-inducible gene Mif1/KIAA0025 is a target of the unfolded protein response pathway. FEBS Lett. 469: 123-131.
2. Kokame, K., et al. 2000. Herp, a new ubiquitin-like membrane protein induced by endoplasmic reticulum stress. J. Biol. Chem. 275: 32846-32853.
3. Kokame, K., et al. 2001. Identification of ERSE-II, a new *cis*-acting element responsible for the ATF6-dependent mammalian unfolded protein response. J. Biol. Chem. 276: 9199-9205.
4. Sai, X., et al. 2002. Endoplasmic reticulum stress-inducible protein, Herp, enhances presenilin-mediated generation of Amyloid β-protein. J. Biol. Chem. 277: 12915-12920.
5. Schulze, A., et al. 2005. The ubiquitin-domain protein HERP forms a complex with components of the endoplasmic reticulum associated degradation pathway. J. Mol. Biol. 354: 1021-1027.
6. Liang, G., et al. 2006. Luman/CREB3 induces transcription of the endoplasmic reticulum (ER) stress response protein HERP through an ER stress response element. Mol. Cell. Biol. 26: 7999-8010.
7. Tuvia, S., et al. 2007. The ubiquitin E3 ligase POSH regulates calcium homeostasis through spatial control of HERP. J. Cell Biol. 177: 51-61.


## CHROMOSOMAL LOCATION

Genetic locus: HERPUD2 (human) mapping to 7p14.2.

## PRODUCT

HERPUD2 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see HERPUD2 shRNA Plasmid (h): sc-89623-SH and HERPUD2 shRNA (h) Lentiviral Particles: sc-89623-V as alternate gene silencing products.

For independent verification of HERPUD2 (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-89623A, sc-89623B and sc-89623C.

## 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

HERPUD2 siRNA (h) is recommended for the inhibition of HERPUD2 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 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.

## GENE EXPRESSION MONITORING

HERPUD2 (D-12): sc-398583 is recommended as a control antibody for monitoring of HERPUD2 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-IgGκ BP-HRP: sc-516102 or m-IgGκ 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-IgGκ BP-FITC: sc-516140 or m-IgGκ 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 HERPUD2 gene expression knockdown using RT-PCR Primer: HERPUD2 (h)-PR: sc-89623-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.