

# UHRF1 siRNA (h): sc-76805

## BACKGROUND

UHRF1 (ubiquitin-like, containing PHD and RING finger domains, 1), also known as Np95 (nuclear zinc finger protein 95), ICBP90 (inverted CCAAT box-binding protein of 90 kDa) or RNF106, is a transcription and cell cycle regulator belonging to the RING-finger type E3 ubiquitin ligase subfamily. UHRF1 is expressed in bone marrow, thymus, heart, testis and lung, and contains one PHD-type zinc finger, a ubiquitin-like domain, two RING-type zinc fingers and one YDG/SRA domain. Localizing to the nucleus, UHRF1 is believed to function as an E3 ubiquitin-protein ligase that accepts a ubiquitin residue from an E2 ubiquitin-conjugating enzyme and immediately transfers that residue to a protein that is targeted for degradation. By mediating ubiquitination, UHRF1 plays an important role in cellular proliferation. In addition, UHRF1 directly interacts with Dnmt1 (a maintenance DNA methyltransferase) and is required for the stable association of Dnmt1 with chromatin. UHRF1 is overexpressed in cancer cells, suggesting a possible role in carcinogenesis.

## REFERENCES

1. Hopfner, R., et al. 2000. ICBP90, a novel human CCAAT binding protein, involved in the regulation of topoisomerase II $\alpha$  expression. *Cancer Res.* 60: 121-128.
2. Muto, M., et al. 2002. Targeted disruption of Np95 gene renders murine embryonic stem cells hypersensitive to DNA damaging agents and DNA replication blocks. *J. Biol. Chem.* 277: 34549-34555.

## CHROMOSOMAL LOCATION

Genetic locus: UHRF1 (human) mapping to 19p13.3.

## PRODUCT

UHRF1 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 UHRF1 shRNA Plasmid (h): sc-76805-SH and UHRF1 shRNA (h) Lentiviral Particles: sc-76805-V as alternate gene silencing products.

For independent verification of UHRF1 (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-76805A, sc-76805B and sc-76805C.

## 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

UHRF1 siRNA (h) is recommended for the inhibition of UHRF1 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

UHRF1 (H-8): sc-373750 is recommended as a control antibody for monitoring of UHRF1 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 $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker<sup>™</sup> Molecular Weight Standards: sc-2035, UltraCruz<sup>®</sup> Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgG $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz<sup>®</sup> Mounting Medium: sc-24941 or UltraCruz<sup>®</sup> Hard-set Mounting Medium: sc-359850.

## RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor UHRF1 gene expression knockdown using RT-PCR Primer: UHRF1 (h)-PR: sc-76805-PR (20  $\mu$ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

## SELECT PRODUCT CITATIONS

1. Li, X., et al. 2011. UHRF1 confers radioresistance to human breast cancer cells. *Int. J. Radiat. Biol.* 87: 263-273.
2. Qin, L., et al. 2014. Reversible epigenetic regulation of 14-3-3 $\sigma$  expression in acquired gemcitabine resistance by UHRF1 and DNA methyltransferase 1. *Mol. Pharmacol.* 86: 561-569.
3. Zhang, Y., et al. 2014. Upregulated UHRF1 promotes bladder cancer cell invasion by epigenetic silencing of KiSS1. *PLoS ONE* 9: e104252.
4. Jung, Y.D., et al. 2015. Downregulation of UHRF1 promotes EMT via inducing CXCR4 in human cancer cells. *Int. J. Oncol.* 46: 1232-1242.
5. Ge, T.T., et al. 2016. UHRF1 gene silencing inhibits cell proliferation and promotes cell apoptosis in human cervical squamous cell carcinoma CaSki cells. *J. Ovarian Res.* 9: 42.

## RESEARCH USE

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