SANTA CRUZ BIOTECHNOLOGY, INC.

UBE2S siRNA (h): sc-97109

BACKGROUND

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). UBE2S (ubiquitin-conjugating enzyme E2S), also known as EPF5 or E2EPF, is a 222 amino acid protein that belongs to the E2 family of ubiquitin-conjugating enzymes. Involved in the protein degradation pathway, UBE2S catalyzes the ATP-dependent attachment of ubiquitin (Ub) to target proteins, thereby tagging them for subsequent destruction by the proteasome. UBE2S is thought to increase the rate of tumor cell proliferation, invasion and metastasis through the VHL (von Hippel-Lindau) pathway, suggesting a role for UBE2S in carcinogenesis.

REFERENCES

1. Liu, Z., et al. 1992. cDNA cloning of a novel human ubiquitin carrier protein. An antigenic domain specifically recognized by endemic pemphigus foliaceus autoantibodies is encoded in a secondary reading frame of this human epidermal transcript. J. Biol. Chem. 267: 15829-15835.
2. Wefes, I., et al. 1995. Induction of ubiquitin-conjugating enzymes during terminal erythroid differentiation. Proc. Natl. Acad. Sci. USA 92: 4982-4986.
3. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 610309. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
4. Marques, A.C., et al. 2005. Emergence of young human genes after a burst of retroposition in primates. PLoS Biol. 3: e357.
5. Jung, C.R., et al. 2006. E2-EPF UCP targets pVHL for degradation and associates with tumor growth and metastasis. Nat. Med. 12: 809-816.

CHROMOSOMAL LOCATION

Genetic locus: UBE2S (human) mapping to 19q13.42.

PRODUCT

UBE2S siRNA (h) is a target-specific 19-25 nt siRNA 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 UBE2S shRNA Plasmid (h): sc-97109-SH and UBE2S shRNA (h) Lentiviral Particles: sc-97109-V as alternate gene silencing products.

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

UBE2S siRNA (h) is recommended for the inhibition of UBE2S 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

UBE2S (C-1): sc-390917 is recommended as a control antibody for monitoring of UBE2S 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 UBE2S gene expression knockdown using RT-PCR Primer: UBE2S (h)-PR: sc-97109-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Pan, Y.H., et al. 2018. UBE2S enhances the ubiquitination of p53 and exerts oncogenic activities in hepatocellular carcinoma. Biochem. Biophys. Res. Commun. 503: 895-902.
2. Lin, M., et al. 2019. UBE2S mediates tumor progression via SOX6/β-catenin signaling in endometrial cancer. Int. J. Biochem. Cell Biol. 109: 17-22.

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.