SANTA CRUZ BIOTECHNOLOGY, INC.

URE-B1 siRNA (h): sc-61758

BACKGROUND

The ubiquitin (Ub) pathway involves three sequential enzymatic steps that facilitate the conjugation of Ub and Ub-like molecules to specific protein substrates. The first step requires the ATP-dependent activation of the Ub C-terminus and the assembly of multi-Ub chains by the Ub-activating enzyme known as the E1 component. The Ub chain is then conjugated to the Ub-conjugating enzyme (E2) to generate an intermediate Ub-E2 complex. The Ub-ligase (E3) then catalyzes the transfer of Ub from E2 to the appropriate protein substrate. A wide range of enzymes facilitate in the proteolytic Ub pathway, including upstream regulatory element binding protein 1 (URE-B1), which functions as a suppressor element in the regulation of dynorphin and macrophage inflammatory protein 1 β gene transcription. URE-B1 is also a negative regulator of p53 during the colorectal carcinoma progression through the ubiquitination pathway mediated by it's HECT domain.

REFERENCES

1. Gu, J., et al. 1994. Cloning of a DNA binding protein that is a tyrosine kinase substrate and recognizes an upstream initiator-like sequence in the promoter of the preprodynorphin gene. Brain Res. Mol. Brain Res. 24: 77-88.
2. Gu, J., et al. 1995. URE-B1, a tyrosine phosphorylated nuclear protein, inhibits p53 transactivation. Oncogene 11: 2175-2178.
3. Gu, J., et al. 1997. URE, an initiator (Inr)-like site, suppresses the promoter of the rat dynorphin gene. Biochem. Biophys. Res. Commun. 231: 172-177.
4. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 191170. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
5. Solomon, S.S., et al. 2005. Proteome of H-411E (liver) cells exposed to Insulin and tumor necrosis factor α: analysis of proteins involved in Insulin resistance. J. Lab. Clin. Med. 145: 275-283.
6. Yoon, S.Y., et al. 2005. Overexpression of human URE-B1 in colorectal cancer: HECT domain of human URE-B1 inhibits the activity of tumor suppressor p53 protein. Biochem. Biophys. Res. Commun. 326: 7-17.
7. Chen, D., et al. 2006. ARF-BP1 as a potential therapeutic target. Br. J. Cancer 94: 1555-1558.

CHROMOSOMAL LOCATION

Genetic locus: HUWE1 (human) mapping to Xp11.22.

PRODUCT

URE-B1 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 URE-B1 shRNA Plasmid (h): sc-61758-SH and URE-B1 shRNA (h) Lentiviral Particles: sc-61758-V as alternate gene silencing products.

For independent verification of URE-B1 (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-61758A, sc-61758B and sc-61758C.

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

URE-B1 siRNA (h) is recommended for the inhibition of URE-B1 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor URE-B1 gene expression knockdown using RT-PCR Primer: URE-B1 (h)-PR: sc-61758-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. Besche, H.C., et al. 2014. Autoubiquitination of the 26S Proteasome on Rpn13 regulates breakdown of ubiquitin conjugates. EMBO J. 33: 1159-1176.
2. Park, S.H., et al. 2016. Metformin enhances TRAIL-induced apoptosis by Mcl-1 degradation via Mule in colorectal cancer cells. Oncotarget 7: 59503-59518.

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.