SANTA CRUZ BIOTECHNOLOGY, INC.

UBE3B siRNA (h): sc-96189

BACKGROUND

E3 ubiquitin ligases are a large family of proteins that are engaged in the regulation of the turnover and activity of many target proteins and are classified into three major structurally distinct types: N-end rule E3s, E3s containing the HECT (homology to E6AP C-terminus) domain and E3s with RING fingers. UBE3B (ubiquitin protein ligase E3B) is a 1,068 amino acid widely expressed protein containing one HECT (E6AP-type E3 ubiquitin-protein ligase) domain and an IQ domain. UBE3B is a E3 ubiquitin-protein ligase that accepts ubiquitin from an E2 ubiquitin-conjugating enzyme in the form of a thioester, and then directly transfers the ubiquitin to targeted substrates. UBE3B exists as three alternatively spliced isoforms and is encoded by a gene located in human chromosome 12, which encodes over 1,100 genes and comprises approximately 4.5% of the human genome.

REFERENCES

1. Lomax, M.I., Huang, L., Cho, Y., Gong, T.L. and Altschuler, R.A. 2000. Differential display and gene arrays to examine auditory plasticity. Hear. Res. 147: 293-302.
2. Greene, C.C., McMillan, P.M., Barker, S.E., Kurnool, P., Lomax, M.I., Burmeister, M. and Lesperance, M.M. 2001. DFNA25, a novel locus for dominant nonsyndromic hereditary hearing impairment, maps to 12q21-24. Am. J. Hum. Genet. 68: 254-260.
3. You, J. and Pickart, C.M. 2001. A HECT domain E3 enzyme assembles novel polyubiquitin chains. J. Biol. Chem. 276: 19871-19878.
4. Lomax, M.I., Gong, T.W., Cho, Y., Huang, L., Oh, S.H., Adler, H.J., Raphael, Y. and Altschuler, R.A. 2001. Differential gene expression following noise trauma in birds and mammals. Noise Health. 3: 19-35.
5. Gong, T.W., Huang, L., Warner, S.J. and Lomax, M.I. 2003. Characterization of the human UBE3B gene: structure, expression, evolution, and alternative splicing. Genomics 82: 143-152.
6. Ardley, H.C. and Robinson, P.A. 2005. E3 ubiquitin ligases. Essays Biochem. 41: 15-30.
7. Sun, Y. 2005. Overview of approaches for screening for ubiquitin ligase inhibitors. Methods Enzymol. 399: 654-663.

CHROMOSOMAL LOCATION

Genetic locus: UBE3B (human) mapping to 12q24.11.

PRODUCT

UBE3B 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 UBE3B shRNA Plasmid (h): sc-96189-SH and UBE3B shRNA (h) Lentiviral Particles: sc-96189-V as alternate gene silencing products.

For independent verification of UBE3B (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-96189A, sc-96189B and sc-96189C.

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

UBE3B siRNA (h) is recommended for the inhibition of UBE3B 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 UBE3B gene expression knockdown using RT-PCR Primer: UBE3B (h)-PR: sc-96189-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.