SANTA CRUZ BIOTECHNOLOGY, INC.

G2E3 siRNA (m): sc-145288

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). G2E3 (G_2/M phase-specific E3 ubiquitin-protein ligase), also known as KIAA1333, is a 706 amino acid protein that localizes to both the nucleus and the cytoplasm and contains one PHF-type zinc finger and one HECT domain. Expressed at high levels in kidney, brain, ovary, liver and testis, G2E3 functions as an E3 ubiquitin-protein ligase that can accept ubiquitin from an E2 ubiquitin-conjugating enzyme and can transfer that ubiquitin to specific substrates. Via its ability to accept and transfer ubiquitin, G2E3 is thought to play an important role in embryonic development and cell cycle regulation.

REFERENCES

1. Nagase, T., Kikuno, R., Ishikawa, K.I., Hirosawa, M. and Ohara, O. 2000. Prediction of the coding sequences of unidentified human genes. XVI. The complete sequences of 150 new cDNA clones from brain which code for large proteins *in vitro*. DNA Res. 7: 65-73.
2. Crawford, D.F. and Piwnica-Worms, H. 2001. The G_2 DNA damage checkpoint delays expression of genes encoding mitotic regulators. J. Biol. Chem. 276: 37166-37177.
3. Brooks, W.S., Banerjee, S. and Crawford, D.F. 2007. G2E3 is a nucleocytoplasmic shuttling protein with DNA damage responsive localization. Exp. Cell Res. 313: 665-676.
4. Online Mendelian Inheritance in Man, OMIM™. 2007. Johns Hopkins University, Baltimore, MD. MIM Number: 611299. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
5. Brooks, W.S., Helton, E.S., Banerjee, S., Venable, M., Johnson, L., Schoeb, T.R., Kesterson, R.A. and Crawford, D.F. 2008. G2E3 is a dual function ubiquitin ligase required for early embryonic development. J. Biol. Chem. 283: 22304-22315.

CHROMOSOMAL LOCATION

Genetic locus: G2e3 (mouse) mapping to 12 C1.

PRODUCT

G2E3 siRNA (m) 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 G2E3 shRNA Plasmid (m): sc-145288-SH and G2E3 shRNA (m) Lentiviral Particles: sc-145288-V as alternate gene silencing products.

For independent verification of G2E3 (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-145288A, sc-145288B and sc-145288C.

RESEARCH USE

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

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

G2E3 siRNA (m) is recommended for the inhibition of G2E3 expression in mouse 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 G2E3 gene expression knockdown using RT-PCR Primer: G2E3 (m)-PR: sc-145288-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.