SANTA CRUZ BIOTECHNOLOGY, INC.

HEG1 siRNA (h): sc-78365

BACKGROUND

HEG1 (HEG homolog 1) is also known as HEG and is a 1,381 amino acid protein that exists as two alternatively spliced isoforms, one of which is a single-pass membrane protein and the other of which is secreted. HEG1, which is expressed in endothelial cells and smooth muscle cells of heart tissue, contains two EGF-like domains that play a role in calcium-binding events which may regulate concentric heart growth. The gene encoding HEG1 maps to human chromosome 3, which houses over 1,100 genes, including a chemokine receptor (CKR) gene cluster and a variety of human cancer-related gene loci. Key tumor suppressing genes on chromosome 3 include those that encode the apoptosis mediator RASSF1, the cell migration regulator HYAL1 and the angiogenesis suppressor SEMA3B. Marfan syndrome, porphyria, von Hippel-Lindau syndrome, osteogenesis imperfecta and Charcot-Marie-Tooth disease are a few of the numerous genetic diseases associated with chromosome 3.

REFERENCES

1. Mably, J.D., et al. 2003. heart of glass regulates the concentric growth of the heart in zebrafish. Curr. Biol. 13: 2138-2147.
2. Bortvin, A., et al. 2003. Incomplete reactivation of Oct4-related genes in mouse embryos cloned from somatic nuclei. Development 130: 1673-1680.
3. Braga, E.A., et al. 2003. New tumor suppressor genes in hot spots of human chromosome 3: new methods of identification. Mol. Biol. 37: 194-211.
4. Mably, J.D., et al. 2006. Santa and valentine pattern concentric growth of cardiac myocardium in the zebrafish. Development 133: 3139-3146.
5. Picelli, S., et al. 2008. Genome-wide linkage scan for colorectal cancer susceptibility genes supports linkage to chromosome 3q. BMC Cancer 8: 87.
6. Wilting, S.M., et al. 2008. Integrated genomic and transcriptional profiling identifies chromosomal loci with altered gene expression in cervical cancer. Genes Chromosomes Cancer 47: 890-905.
7. Birch, A.H., et al. 2008. Transcriptome analysis of serous ovarian cancers identifies differentially expressed chromosome 3 genes. Mol. Carcinog. 47: 56-65.

CHROMOSOMAL LOCATION

Genetic locus: HEG1 (human) mapping to 3q21.2.

PRODUCT

HEG1 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 HEG1 shRNA Plasmid (h): sc-78365-SH and HEG1 shRNA (h) Lentiviral Particles: sc-78365-V as alternate gene silencing products.

For independent verification of HEG1 (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-78365A, sc-78365B and sc-78365C.

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

HEG1 siRNA (h) is recommended for the inhibition of HEG1 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 HEG1 gene expression knockdown using RT-PCR Primer: HEG1 (h)-PR: sc-78365-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. Tsuji, S., et al. 2017. HEG1 is a novel mucin-like membrane protein that serves as a diagnostic and therapeutic target for malignant mesothelioma. Sci. Rep. 7: 45768.

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.