SANTA CRUZ BIOTECHNOLOGY, INC.

DRAM siRNA (m): sc-143169

BACKGROUND

DRAM (damage-regulated autophagy modulator) is a multi-pass membrane protein that belongs to the TMEM77 family of proteins and localizes to the lysosome membrane. DRAM is a highly conserved protein across many species and contains six transmembrane domains and an endoplasmic reticulum (ER) signal peptide. Its expression is induced by both p53 and p73, and it acts as a key player that is required (but not sufficient) for p53-induced autophagy and apoptosis. Although its expression is also induced by p73, DRAM is dispensable for p73-mediated apoptosis. As is suggested by its lysosomal localization, DRAM may participate in the degradation of proteins or in trafficking through the secretory pathway. In addition, DRAM expression is downregulated in human cancers, implying a profound role for DRAM in tumor development.

REFERENCES

1. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 610776. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
2. Green, D.R. and Chipuk, J.E. 2006. p53 and metabolism: Inside the TIGAR. Cell 126: 30-32.
3. Crighton, D., et al. 2006. DRAM, a p53-induced modulator of autophagy, is critical for apoptosis. Cell 126: 121-134.
4. Crighton, D., et al. 2007. p73 regulates DRAM-independent autophagy that does not contribute to programmed cell death. Cell Death Differ. 14: 1071-1079.
5. Kerley-Hamilton, J.S., et al. 2007. The direct p53 target gene, FLJ11259/DRAM, is a member of a novel family of transmembrane proteins. Biochim. Biophys. Acta 1769: 209-219.
6. Crighton, D., et al. 2007. DRAM links autophagy to p53 and programmed cell death. Autophagy 3: 72-74.
7. Abida, W.M. and Gu, W. 2008. p53-dependent and p53-independent activation of autophagy by ARF. Cancer Res. 68: 352-357.

CHROMOSOMAL LOCATION

Genetic locus: Dram1 (mouse) mapping to 10 C1.

PRODUCT

DRAM 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 DRAM shRNA Plasmid (m): sc-143169-SH and DRAM shRNA (m) Lentiviral Particles: sc-143169-V as alternate gene silencing products.

For independent verification of DRAM (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-143169A, sc-143169B and sc-143169C.

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

DRAM siRNA (m) is recommended for the inhibition of DRAM 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 DRAM gene expression knockdown using RT-PCR Primer: DRAM (m)-PR: sc-143169-PR (20 µl, 512 bp). 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.