SANTA CRUZ BIOTECHNOLOGY, INC.

CAGE siRNA (h): sc-62056

BACKGROUND

CAGE (cancer-associated gene protein), also known as DEAD box protien 53 (DDX53) or DEAD box protein CAGE, belongs to the DEAD box helicase family. It contains one helicase ATP-binding domain, one helicase C-terminal domain and one KH domain. CAGE localizes to the nucleus and, in normal adult tissues, is exclusively expressed in testis but it has also been found in a wide variety of cancer tissues and cell lines. Overexpression of CAGE leads to the activation of FAK, ERK and p38 MAPK along with a reduction in reactive oxygen species (ROS). It is also responsible for inducing catalase activity and therefore enhancing cell motility. This suggests that CAGE may enhance the migration of cancer cells. In addition, hypomethylation of the CAGE promoter region is associated with tumor progression and may serve as a valuable marker in cancer diagnosis.

REFERENCES

1. Cho, B., et al. 2002. Identification and characterization of a novel cancer/testis antigen gene CAGE. Biochem. Biophys. Res. Commun. 292: 715-726.
2. Cho, B., et al. 2003. Promoter hypomethylation of a novel cancer/testis antigen gene CAGE is correlated with its aberrant expression and is seen in premalignant stage of gastric carcinoma. Biochem. Biophys. Res. Commun. 307: 52-63.
3. Iwata, T., et al. 2005. Frequent immune responses to a cancer/testis antigen, CAGE, in patients with microsatellite instability-positive endometrial cancer. Clin. Cancer Res. 11: 3949-3957.
4. Chen, Y.T., et al. 2005. Identification of cancer/testis-antigen genes by massively parallel signature sequencing. Proc. Natl. Acad. Sci. USA 102: 7940-7945.
5. Shim, H., et al. 2006. CAGE, a novel cancer/testis antigen gene, promotes cell motility by activation ERK and p38 MAPK and downregulating ROS. Mol. Cells 21: 367-375.

CHROMOSOMAL LOCATION

Genetic locus: DDX53 (human) mapping to Xp22.11.

PRODUCT

CAGE 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 CAGE shRNA Plasmid (h): sc-62056-SH and CAGE shRNA (h) Lentiviral Particles: sc-62056-V as alternate gene silencing products.

For independent verification of CAGE (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-62056A, sc-62056B and sc-62056C.

PROTOCOLS

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

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

CAGE siRNA (h) is recommended for the inhibition of CAGE 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 CAGE gene expression knockdown using RT-PCR Primer: CAGE (h)-PR: sc-62056-PR (20 µl, 517 bp). 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.