SANTA CRUZ BIOTECHNOLOGY, INC.

ACTG2 siRNA (h): sc-105038

BACKGROUND

All eukaryotic cells express Actin, which often constitutes as much as 50% of total cellular protein. Actin filaments can form both stable and labile structures and are crucial components of microvilli and the contractile apparatus of muscle cells. While lower eukaryotes, such as yeast, have only one Actin gene, higher eukaryotes have several isoforms encoded by a family of genes. At least six types of Actin are present in mammalian tissues and fall into three classes. α-Actin expression is limited to various types of muscle, whereas β- and γ-Actin are the principle constituents of filaments in other tissues. ACTG2 (Actin, γ2, smooth muscle, enteric), also known as ACT, ACTE, ACTA3 or ACTL3, is a 376 amino acid γ-Actin that localizes to both the cytoplasm and the cytoskeleton and, like other Actins, is involved in various types of cell motility and structural maintenance.

REFERENCES

1. Miwa, T. and Kamada, S. 1990. The nucleotide sequence of a human smooth muscle (enteric type) γ-Actin cDNA. Nucleic Acids Res. 18: 4263.
2. Miwa, T., et al. 1991. Structure, chromosome location, and expression of the human smooth muscle (enteric type) γ-Actin gene: evolution of six human Actin genes. Mol. Cell. Biol. 11: 3296-3306.
3. Ueyama, H., et al. 1995. Chromosomal mapping of the human smooth muscle actin gene (enteric type, ACTA3) to 2p13.1 and molecular nature of the hindIII polymorphism. Genomics 25: 720-723.
4. Szucsik, J.C. and Lessard, J.L. 1995. Cloning and sequence analysis of the mouse smooth muscle γ-enteric Actin gene. Genomics 28: 154-162.
5. Kohnen, G., et al. 2000. Spatially regulated differentiation of endometrial vascular smooth muscle cells. Hum. Reprod. 15: 284-292.
6. Filmore, R.A., et al. 2002. The smooth muscle γ-Actin gene is androgen responsive in prostate epithelia. Gene Expr. 10: 201-211.

CHROMOSOMAL LOCATION

Genetic locus: ACTG2 (human) mapping to 2p13.1.

PRODUCT

ACTG2 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 ACTG2 shRNA Plasmid (h): sc-105038-SH and ACTG2 shRNA (h) Lentiviral Particles: sc-105038-V as alternate gene silencing products.

For independent verification of ACTG2 (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-105038A, sc-105038B and sc-105038C.

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

ACTG2 siRNA (h) is recommended for the inhibition of ACTG2 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 ACTG2 gene expression knockdown using RT-PCR Primer: ACTG2 (h)-PR: sc-105038-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.