SANTA CRUZ BIOTECHNOLOGY, INC.

Xinα siRNA (m): sc-63227

BACKGROUND

Xinα, also known as CMYA1 (cardiomyopathy-associated protein 1) or XIRP1 (Xin actin-binding repeat containing 1), is a 1,843 amino acid protein that functions to protect Actin filaments from depolymerization. Colocalized to the cell junction with actin stress fibers, Xinα contains 15 Xin repeats and interacts with several proteins including β-catenin, Filamin and VASP (vasodilator-stimulated phosphoprotein). The Xin repeats with the protein are thought to stabilize actin-based cytoskeletons and may help to crosslink microfilaments with actin networks. Xinα shares 78% similarity with its mouse counterpart and is expressed in the heart as three alternatively spliced isoforms designated A, B and C. In mice, Xinα is essential for proper heart tube formation and correct cardiac looping, suggesting that the human homolog may have similar functions.

REFERENCES

1. Wang, D.Z., et al. 1999. Requirement of a novel gene, Xin, in cardiac morphogenesis. Development 126: 1281-1294.
2. Sinn, H.W., et al. 2002. Localization of the novel Xin protein to the adherens junction complex in cardiac and skeletal muscle during development. Dev. Dyn. 225: 1-13.
3. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 609777. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
4. Pacholsky, D., et al. 2004. Xin repeats define a novel actin-binding motif. J. Cell Sci. 117: 5257-5268.
5. Jung-Ching Lin, J., et al. 2005. Structure, expression, and function of a novel intercalated disc protein, Xin. J. Med. Sci. 25: 215-222.
6. van der Ven, P.F., et al. 2006. Unusual splicing events result in distinct Xin isoforms that associate differentially with filamin c and Mena/VASP. Exp. Cell Res. 312: 2154-2167.

CHROMOSOMAL LOCATION

Genetic locus: Xirp1 (mouse) mapping to 9 F4.

PRODUCT

Xinα 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 Xinα shRNA Plasmid (m): sc-63227-SH and Xinα shRNA (m) Lentiviral Particles: sc-63227-V as alternate gene silencing products.

For independent verification of Xinα (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-63227A, sc-63227B and sc-63227C.

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

Xinα siRNA (m) is recommended for the inhibition of Xinα 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.

GENE EXPRESSION MONITORING

Xinα (D-8): sc-166658 is recommended as a control antibody for monitoring of Xinα gene expression knockdown by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) or immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor Xinα gene expression knockdown using RT-PCR Primer: Xinα (m)-PR: sc-63227-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.