SANTA CRUZ BIOTECHNOLOGY, INC.

emerin siRNA (m): sc-35297

BACKGROUND

Emerin is believed to be a member of the nuclear lamina associated protein family. It is ubiquitously expressed and localized to the nuclear membrane in normal cells. Mutations of the gene that encodes emerin result in the X-linked recessive disease Emery-Dreyfuss muscular dystrophy (EDMD), which is characterized by slowly progressing contractures, skeletal muscle wasting and cardiomyopathy. Research has demonstrated that the lack of emerin expression is one cause of EDMD. Emerin is involved in the association of the nuclear membrane with the lamina, and is localized specifically to desmosomes and fasciae adherentes in the heart. This may account for conduction defects in patients with EDMD.

REFERENCES

1. Bione, S., et al. 1994. Identification of a novel X-linked gene responsible for Emery-Dreifuss muscular dystrophy. Nat. Genet. 8: 323-327.
2. Bione, S., et al. 1995. Identification of new mutations in the Emery-Dreifuss muscular dystrophy gene and evidence for genetic heterogeneity of the disease. Hum. Mol. Genet. 4: 1859-1863.
3. Cartegni, L., et al. 1997. Heart-specific localization of emerin: new insights into Emery-Dreifuss muscular dystrophy. Hum. Mol. Genet. 6: 2257-2264.
4. Kubo, S., et al. 1997. Emery-Dreifuss muscular dystrophy. Nippon Rinsho 55: 3186-3189.
5. Small, K. and Warren, S.T. 1998. Emerin deletions occurring on both Xq28 inversion backgrounds. Hum. Mol. Genet. 7: 135-139.

CHROMOSOMAL LOCATION

Genetic locus: Emd (mouse) mapping to X A7.3.

PRODUCT

emerin 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 emerin shRNA Plasmid (m): sc-35297-SH and emerin shRNA (m) Lentiviral Particles: sc-35297-V as alternate gene silencing products.

For independent verification of emerin (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-35297A, sc-35297B and sc-35297C.

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

emerin siRNA (m) is recommended for the inhibition of emerin 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

emerin (H-7): sc-393247 is recommended as a control antibody for monitoring of emerin 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 emerin gene expression knockdown using RT-PCR Primer: emerin (m)-PR: sc-35297-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. Tilgner, K., et al. 2009. Dynamic complexes of A-type lamins and emerin influence adipogenic capacity of the cell via nucleocytoplasmic distribution of β-catenin. J. Cell Sci. 122: 401-413.
2. Tang, Y., et al. 2022. Matrix remodeling controls a nuclear Lamin A/C-emerin network that directs Wnt-regulated stem cell fate. Dev. Cell 57: 480-495.e6.
3. Xu, X., et al. 2023. Chromatin remodeling and nucleoskeleton synergistically control osteogenic differentiation in different matrix stiffnesses. Mater. Today Bio 20: 100661.

RESEARCH USE

For research use only, not for use in diagnostic procedures.