SANTA CRUZ BIOTECHNOLOGY, INC.

ANKRD45 siRNA (m): sc-141104

BACKGROUND

Ankyrins are membrane adaptor molecules that play important roles in coupling integral membrane proteins to the spectrin-based cytoskeleton network. Mutations of ankyrin genes lead to severe genetic diseases, such as fatal cardiac arrhythmias and hereditary spherocytosis. ANKRD45 (ankyrin repeat domain 45), also known as cancer/testis antigen 117, is a 282 amino acid protein that contains two ANK repeats and exists as two alternatively spliced isoforms. Conserved in chimpanzee, canine, mouse, rat and zebrafish, ANKRD45 is encoded by a gene that maps to human chromosome 1q25.1. As the largest human chromosome, chromosome 1 makes up approximately 8% of the human genome and contains 260 million base pairs encoding 3,000 genes. Numerous diseases are linked to chromosome 1, notably the rare aging disease Hutchinson-Gilford progeria. Stickler syndrome, Parkinson's disease, Gaucher disease and Usher syndrome are also associated with chromosome 1. Aberrations in chromosome 1 exist in a variety of cancers, including head and neck cancer, malignant melanoma and multiple myeloma.

REFERENCES

1. Weise, A., et al. 2005. New insights into the evolution of chromosome 1. Cytogenet. Genome Res. 108: 217-222.
2. Marzin, Y., et al. 2006. Chromosome 1 abnormalities in multiple myeloma. Anticancer Res. 26: 953-959.
3. McClintock, D., et al 2006. Hutchinson-Gilford progeria mutant lamin A primarily targets human vascular cells as detected by an anti-Lamin A G608G antibody. Proc. Natl. Acad. Sci. USA 103: 2154-2159.
4. Bowden, N.A., et al. 2007. Gene expression profiling in familial adenomatous polyposis adenomas and desmoid disease. Hered. Cancer Clin. Pract. 5: 79-96.
5. Connelly, J.J., et al. 2008. Genetic and functional association of FAM5C with myocardial infarction. BMC Med. Genet. 9: 33.
6. Civelek, M., et al. 2009. Chronic endoplasmic reticulum stress activates unfolded protein response in arterial endothelium in regions of susceptibility to atherosclerosis. Circ. Res. 105: 453-461.
7. Condomines, M., et al. 2009. Gene expression profiling and real-time PCR analyses identify novel potential cancer-testis antigens in multiple myeloma. J. Immunol. 183: 832-840.
8. Tennessen, J.A., et al. 2010. Signatures of positive selection apparent in a small sample of human exomes. Genome Res. 20: 1327-1334.
9. Pantzartzi, C., et al. 2010. Promoter complexity and tissue-specific expression of stress response components in *Mytilus galloprovincialis,* a sessile marine invertebrate species. PLoS Comput. Biol. 6: e1000847.

CHROMOSOMAL LOCATION

Genetic locus: Ankrd45 (mouse) mapping to 1 H2.1.

PROTOCOLS

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

PRODUCT

ANKRD45 siRNA (m) is a target-specific 19-25 nt siRNA 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 ANKRD45 shRNA Plasmid (m): sc-141104-SH and ANKRD45 shRNA (m) Lentiviral Particles: sc-141104-V as alternate gene silencing 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

ANKRD45 siRNA (m) is recommended for the inhibition of ANKRD45 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 ANKRD45 gene expression knockdown using RT-PCR Primer: ANKRD45 (m)-PR: sc-141104-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.