



# AKNAD1 siRNA (h): sc-88558

## BACKGROUND

AKNAD1 (AKNA domain containing 1) is an 836 amino acid coiled-coil protein belonging to the AKNA family. Existing as four alternatively spliced isoforms, AKNAD1 is encoded by a gene that maps to human chromosome 1p13.3. 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, which is associated with Lamin A. When defective, Lamin A can accumulate in nucleus, causing characteristic nuclear blebs. The MUTYH gene is located on chromosome 1 and is partially responsible for familial adenomatous polyposis. 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. Gregory, S.G., et al. 2006. The DNA sequence and biological annotation of human chromosome 1. *Nature* 441: 315-321.
4. 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.
5. Bowden, N.A., et al. 2007. Gene expression profiling in familial adenomatous polyposis adenomas and desmoid disease. *Hered. Cancer Clin. Pract.* 5: 79-96.
6. Kirpich, I.A., et al. 2010. Integrated hepatic transcriptome and proteome analysis of mice with high-fat diet-induced nonalcoholic fatty liver disease. *J. Nutr. Biochem.* 22: 38-45.
7. SWISS-PROT/TrEMBL (Q5T1N1). World Wide Web URL: <http://www.uniprot.org/uniprot/Q5T1N1>

## CHROMOSOMAL LOCATION

Genetic locus: AKNAD1 (human) mapping to 1p13.3.

## PRODUCT

AKNAD1 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  $\mu$ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see AKNAD1 shRNA Plasmid (h): sc-88558-SH and AKNAD1 shRNA (h) Lentiviral Particles: sc-88558-V as alternate gene silencing products.

For independent verification of AKNAD1 (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-88558A, sc-88558B and sc-88558C.

## 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  $\mu$ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330  $\mu$ l of RNase-free water makes a 10  $\mu$ M solution in a 10  $\mu$ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

## APPLICATIONS

AKNAD1 siRNA (h) is recommended for the inhibition of AKNAD1 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  $\mu$ M in 66  $\mu$ l. 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 AKNAD1 gene expression knockdown using RT-PCR Primer: AKNAD1 (h)-PR: sc-88558-PR (20  $\mu$ l). 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.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.