

## FAM76A siRNA (h): sc-78608

### BACKGROUND

Chromosome 1 is the largest human chromosome spanning about 260 million base pairs and making up 8% of the human genome. There are about 3,000 genes on chromosome 1, and considering the great number of genes there are also a large number of diseases associated with chromosome 1. Notably, the rare aging disease Hutchinson-Gilford progeria is associated with the LMNA gene which encodes lamin A. When defective, the LMNA gene product can build up in the nucleus and cause characteristic nuclear blebs. The mechanism of rapidly enhanced aging is unclear and is a topic of continuing exploration. The MUTYH gene is located on chromosome 1 and is partially responsible for familial adenomatous polyposis. Stickler syndrome, Parkinsons, Gaucher disease and Usher syndrome are also associated with chromosome 1. A breakpoint has been identified in 1q which disrupts the DISC1 gene and is linked to schizophrenia. Aberrations in chromosome 1 are found in a variety of cancers including head and neck cancer, malignant melanoma and multiple myeloma. The FAM76A gene product has been provisionally designated FAM76A pending further characterization.

### REFERENCES

1. Watson, M.L., Kingsmore, S.F., Johnston, G.I., Siegelman, M.H., Le Beau, M.M., Lemons, R.S., Bora, N.S., Howard, T.A., Weissman, I.L., McEver, R.P., et al. 1990. Genomic organization of the selectin family of leukocyte adhesion molecules on human and mouse chromosome 1. *J. Exp. Med.* 172: 263-272.
2. Blackwood, D.H., Fordyce, A., Walker, M.T., St Clair, D.M., Porteous, D.J. and Muir, W.J. 2001. Schizophrenia and affective disorders—cosegregation with a translocation at chromosome 1q42 that directly disrupts brain-expressed genes: clinical and P300 findings in a family. *Am. J. Hum. Genet.* 69: 428-433.
3. Weise, A., Starke, H., Mrasek, K., Claussen, U. and Liehr, T. 2005. New insights into the evolution of chromosome 1. *Cytogenet. Genome Res.* 108: 217-222.
4. Lans, H. and Hoeijmakers, J.H. 2006. Cell biology: aging nucleus gets out of shape. *Nature* 440: 32-34.
5. Gregory, S.G., Barlow, K.F., McLay, K.E., Kaul, R., Swarbreck, D., Dunham, A., Scott, C.E., Howe, K.L., Woodfine, K.C., Spencer, C.A., Jones, M.C., Gillson, C., Searle, S., Zhou, Y., Kokocinski, F., McDonald, L., et al. 2006. The DNA sequence and biological annotation of human chromosome 1. *Nature* 441: 315-321.
6. Hennah, W., Thomson, P., Peltonen, L. and Porteous, D. 2006. Genes and schizophrenia: beyond schizophrenia: the role of DISC-1 in major mental illness. *Schizophr. Bull.* 32: 409-416.
7. Marzin, Y., Jamet, D., Douet-Guilbert, N., Morel, F., Le Bris, M.J., Morice, P., Abgrall, J.F., Berthou, C. and De Braekeleer, M. 2006. Chromosome 1 abnormalities in multiple myeloma. *Anticancer Res.* 26: 953-959.
8. McClintock, D., Gordon, L.B. and Djabali, K. 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.

### CHROMOSOMAL LOCATION

Genetic locus: FAM76A (human) mapping to 1p35.3.

### PRODUCT

FAM76A 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 FAM76A shRNA Plasmid (h): sc-78608-SH and FAM76A shRNA (h) Lentiviral Particles: sc-78608-V as alternate gene silencing products.

For independent verification of FAM76A (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-78608A, sc-78608B and sc-78608C.

### 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

FAM76A siRNA (h) is recommended for the inhibition of FAM76A 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 FAM76A gene expression knockdown using RT-PCR Primer: FAM76A (h)-PR: sc-78608-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.