SANTA CRUZ BIOTECHNOLOGY, INC.

SAMD3 siRNA (h): sc-95602

BACKGROUND

SAMD3 (sterile α motif domain-containing protein 3) is a 520 amino acid protein that contains one SAM (sterile α motif) domain. Existing as two alternatively spliced isoforms, the SAMD3 gene is conserved in chimpanzee, canine, bovine and mouse, and maps to human chromosome 6q23.1. The medulloblastoma cell line DAOY has a homozygous deletion on chromosome 6 that disrupts three genes: SAMD3, L3MBTL3 and TMEM200A. This region of chromosome 6 has been identified as a significant region of loss in medulloblastoma. Making up nearly 6% of the human genome, chromosome 6 contains around 1,200 genes within 170 million base pairs of sequence. Deletion of a portion of the q arm of chromosome 6 is associated with early onset intestinal cancer suggesting the presence of a cancer susceptibility locus. A bipolar disorder susceptibility locus has also been identified on the q arm of chromosome 6.

REFERENCES

1. Trent, J.M., Stanbridge, E.J., McBride, H.L., Meese, E.U., Casey, G., Araujo, D.E., Witkowski, C.M. and Nagle, R.B. 1990. Tumorigenicity in human melanoma cell lines controlled by introduction of human chromosome 6. Science 247: 568-571.
2. Millikin, D., Meese, E., Vogelstein, B., Witkowski, C. and Trent, J. 1991. Loss of heterozygosity for loci on the long arm of chromosome 6 in human malignant melanoma. Cancer Res. 51: 5449-5453.
3. Mungall, A.J., Palmer, S.A., Sims, S.K., Edwards, C.A., Ashurst, J.L., Wilming, L., Jones, M.C., Horton, R., Hunt, S.E., Scott, C.E., Gilbert, J.G.R., Clamp, M.E., Bethel, G., Milne, S., Ainscough, R., Almeida, J.P., et al. 2003. The DNA sequence and analysis of human chromosome 6. Nature 425: 805-811.
4. McQueen, M.B., Devlin, B., Faraone, S.V., Nimgaonkar, V.L., Sklar, P., Smoller, J.W., Abou Jamra, R., Albus, M., Bacanu, S.A., Baron, M., Barrett, T.B., Berrettini, W., Blacker, D., Byerley, W., Cichon, S., Coryell, W., et al. 2005. Combined analysis from eleven linkage studies of bipolar disorder provides strong evidence of susceptibility loci on chromosomes 6q and 8q. Am. J. Hum. Genet. 77: 582-595.
5. Bläker, H., Mechtersheimer, G., Sutter, C., Hertkorn, C., Kern, M.A., Rieker, R.J., Penzel, R., Schirmacher, P. and Kloor, M. 2008. Recurrent deletions at 6q in early age of onset non-HNPCC- and non-FAP-associated intestinal carcinomas. Evidence for a novel cancer susceptibility locus at 6q14-q22. Genes Chromosomes Cancer 47: 159-164.
6. Northcott, P.A., Nakahara, Y., Wu, X., Feuk, L., Ellison, D.W., Croul, S., Mack, S., Kongkham, P.N., Peacock, J., Dubuc, A., Ra, Y.S., Zilberberg, K., McLeod, J., Scherer, S.W., Sunil Rao, J., Eberhart, C.G., Grajkowska, W., et al. 2009. Multiple recurrent genetic events converge on control of histone lysine methylation in medulloblastoma. Nat. Genet. 41: 465-472.

CHROMOSOMAL LOCATION

Genetic locus: SAMD3 (human) mapping to 6q23.1.

RESEARCH USE

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

PRODUCT

SAMD3 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see SAMD3 shRNA Plasmid (h): sc-95602-SH and SAMD3 shRNA (h) Lentiviral Particles: sc-95602-V as alternate gene silencing products.

For independent verification of SAMD3 (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-95602A, sc-95602B and sc-95602C.

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

SAMD3 siRNA (h) is recommended for the inhibition of SAMD3 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 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 SAMD3 gene expression knockdown using RT-PCR Primer: SAMD3 (h)-PR: sc-95602-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

PROTOCOLS

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