SANTA CRUZ BIOTECHNOLOGY, INC.

FAM178A siRNA (m): sc-140422

BACKGROUND

FAM178A is a 1,173 amino acid protein that is phosphorylated upon DNA damage. Widely expressed, it is present at highest levels in skeletal muscle and at slightly lower levels in heart, liver and brain. The gene encoding FAM178A is located within the locus associated with inherited infantile onset spinocerebellar ataxia (IOSCA), a progressive disorder that affects the nervous system and is characterized by ataxia, hypotonia, athetosis and hyporeflexia. Despite its location, no mutations within the FAM178A gene have been found in IOSCA patients and expression levels of FAM178A are no different as compared to normal subjects.

REFERENCES

1. Varilo, T., Nikali, K., Suomalainen, A., Lönnqvist, T. and Peltonen, L. 1996. Tracing an ancestral mutation: genealogical and haplotype analysis of the infantile onset spinocerebellar ataxia locus. Genome Res. 6: 870-875.
2. Nikali, K., Isosomppi, J., Lönnqvist, T., Mao, J.I., Suomalainen, A. and Peltonen, L. 1997. Toward cloning of a novel ataxia gene: refined assignment and physical map of the IOSCA locus (SCA8) on 10q24. Genomics 39: 185-191.
3. Nikali, K., Saharinen, J. and Peltonen, L. 2002. cDNA cloning, expression profile and genomic structure of a novel human transcript on chromosome 10q24, and its analyses as a candidate gene for infantile onset spinocerebellar ataxia. Gene 299: 111-115.
4. Deloukas, P., Earthrowl, M.E., Grafham, D.V., Rubenfield, M., French, L., Steward, C.A., Sims, S.K., Jones, M.C., Searle, S., Scott, C., Howe, K., Hunt, S.E., Andrews, T.D., et al. 2004. The DNA sequence and comparative analysis of human chromosome 10. Nature 429: 375-381.
5. Matsuoka, S., Ballif, B.A., Smogorzewska, A., McDonald, E.R., Hurov, K.E., Luo, J., Bakalarski, C.E., Zhao, Z., Solimini, N., Lerenthal, Y., Shiloh, Y., Gygi, S.P. and Elledge, S.J. 2007. ATM and ATR substrate analysis reveals extensive protein networks responsive to DNA damage. Science 316: 1160-1166.
6. Hakonen, A.H., Goffart, S., Marjavaara, S., Paetau, A., Cooper, H., Mattila, K., Lampinen, M., Sajantila, A., Lönnqvist, T., Spelbrink, J.N. and Suomalainen, A. 2008. Infantile-onset spinocerebellar ataxia and mitochondrial recessive ataxia syndrome are associated with neuronal complex I defect and mtDNA depletion. Hum. Mol. Genet. 17: 3822-3835.

CHROMOSOMAL LOCATION

Genetic locus: Fam178a (mouse) mapping to 19 C3.

PRODUCT

FAM178A 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 FAM178A shRNA Plasmid (m): sc-140422-SH and FAM178A shRNA (m) Lentiviral Particles: sc-140422-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

FAM178A siRNA (m) is recommended for the inhibition of FAM178A 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 FAM178A gene expression knockdown using RT-PCR Primer: FAM178A (m)-PR: sc-140422-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.

PROTOCOLS

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