SANTA CRUZ BIOTECHNOLOGY, INC.

FMR2 siRNA (h): sc-75046

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

FMR2 (fragile X mental retardation 2), also known as AF4 family member 2 (AFF2) or protein Ox19, is a 1,311 amino acid nuclear protein belonging to the AF4 family. Expressed in the brain, placenta and lung, FMR2 exists as two isoforms produced by alternative splicing. Defects in the gene that encodes FMR2 have been found to be a cause of FRAXE, an X-linked form of mental retardation. Individuals expressing the FRAXE site also have more than 200 copies of a GCC repeat adjacent to CpG island, compared to 6 to 35 copies of the GCC repeat in a normal individual. It is believed that loss of FMR2 expression causes this GCC expansion of the FRAXE site.

REFERENCES

1. Gecz, J., et al. 1997. Gene structure and subcellular localization of FMR2, a member of a new family of putative transcription activators. Genomics 44: 201-213.
2. Gecz, J., et al. 1997. FMR2 expression in families with FRAXE mental retardation. Hum. Mol. Genet. 6: 435-441.
3. Chakrabarti, L., et al. 1998. Expression of the murine homologue of FMR2 in mouse brain and during development. Hum. Mol. Genet. 7: 441-448.
4. Gecz, J. and Mulley, J.C. 1999. Characterisation and expression of a large, 13.7 kb FMR2 isoform. Eur. J. Hum. Genet. 7: 157-162.
5. Sharma, D., et al. 2001. Expansion mutation frequency and CGG/GCC repeat polymorphism in FMR1 and FMR2 genes in an Indian population. Genet. Epidemiol. 20: 129-144.
6. Hillman, M.A. and Gecz, J. 2001. Fragile XE-associated familial mental retardation protein 2 (FMR2) acts as a potent transcription activator. J. Hum. Genet. 46: 251-259.
7. Online Mendelian Inheritance in Man, OMIM™. 2006. Johns Hopkins University, Baltimore, MD. MIM Number: 309548. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
8. Brylawski, B.P., et al. 2007. Mapping of an origin of DNA replication in the promoter of fragile X gene FMR1. Exp. Mol. Pathol. 82: 190-196.

CHROMOSOMAL LOCATION

Genetic locus: AFF2 (human) mapping to Xq28.

PRODUCT

FMR2 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 FMR2 shRNA Plasmid (h): sc-75046-SH and FMR2 shRNA (h) Lentiviral Particles: sc-75046-V as alternate gene silencing products.

For independent verification of FMR2 (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-75046A, sc-75046B and sc-75046C.

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

FMR2 siRNA (h) is recommended for the inhibition of FMR2 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 FMR2 gene expression knockdown using RT-PCR Primer: FMR2 (h)-PR: sc-75046-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.