SANTA CRUZ BIOTECHNOLOGY, INC.

ZNF592 siRNA (m): sc-155757

BACKGROUND

Zinc-finger proteins contain DNA-binding domains and have a wide variety of functions, most of which encompass some form of transcriptional activation or repression. The majority of zinc-finger proteins contain a Krüppel-type DNA binding domain and a KRAB domain, which is thought to interact with KAP1, thereby recruiting histone modifying proteins. ZNF592 (zinc finger protein 592), also known as CAMOS or SCAR5, is a 1,267 amino acid protein that contains 13 C_2H_2-type zinc fingers and belongs to the Krüppel C_2H_2-type zinc-finger protein family. Localizing to the nucleus, ZNK592 is widely expressed, with high levels of expression found in skeletal muscle, fetal tissue, and across the central nervous system. ZNF592 becomes phosphorylated upon DNA damage, and defects to ZNF592 have been linked to spinocerebellar ataxia autosomal recessive type 5 (SCAR5). SCAR5 is characterized by poor coordination, developmental delay, speech defects and cerebellar spastic ataxia.

REFERENCES

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2. Delague, V., et al. 2002. A new autosomal recessive non-progressive congenital cerebellar ataxia associated with mental retardation, optic atrophy, and skin abnormalities (CAMOS) maps to chromosome 15q24-q26 in a large consanguineous Lebanese Druze Family. Neurogenetics 4: 23-27.
3. Olsen, J.V., et al. 2006. Global, *in vivo,* and site-specific phosphorylation dynamics in signaling networks. Cell 127: 635-648.
4. Matsuoka, S., et al. 2007. ATM and ATR substrate analysis reveals extensive protein networks responsive to DNA damage. Science 316: 1160-1166.
5. Dephoure, N., et al. 2008. A quantitative atlas of mitotic phosphorylation. Proc. Natl. Acad. Sci. USA 105: 10762-10767.
6. Nicolas, E., et al. 2010. CAMOS, a nonprogressive, autosomal recessive, congenital cerebellar ataxia, is caused by a mutant zinc-finger protein, ZNF592. Eur. J. Hum. Genet. 18: 1107-1113.
7. Huang, J., et al. 2010. Genetic and epigenetic silencing of SCARA5 may contribute to human hepatocellular carcinoma by activating FAK signaling. J. Clin. Invest. 120: 223-241.
8. Arking, D.E., et al. 2010. Genome-wide association study identifies GPC5 as a novel genetic locus protective against sudden cardiac arrest. PLoS ONE 5: e9879.
9. Malovannaya, A., et al. 2010. Streamlined analysis schema for high-throughput identification of endogenous protein complexes. Proc. Natl. Acad. Sci. USA 107: 2431-2436.

CHROMOSOMAL LOCATION

Genetic locus: Zfp592 (mouse) mapping to 7 D3.

PROTOCOLS

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

PRODUCT

ZNF592 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 ZNF592 shRNA Plasmid (m): sc-155757-SH and ZNF592 shRNA (m) Lentiviral Particles: sc-155757-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

ZNF592 siRNA (m) is recommended for the inhibition of ZNF592 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 ZNF592 gene expression knockdown using RT-PCR Primer: ZNF592 (m)-PR: sc-155757-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.