SANTA CRUZ BIOTECHNOLOGY, INC.

FARP2 siRNA (h): sc-94823

BACKGROUND

FARP2 (FERM, RhoGEF and pleckstrin domain-containing protein 2), also known as PLEKHC3 or FERM domain including RhoGEF (FIR), is a 1,545 amino acid protein that contains one FERM domain, one DH domain and two PH domains. It exists as two alternatively spliced isoforms that are abundantly expressed in brain, lung, and testis as well as in embryonic hippocampal and cortical neurons. FARP2 functions as a Rho-guanine nucleotide exchange factor that activates RAC1 and is thought to regulate neurite remodeling of embryonic neurons. Sema3A binding to neuropilin-1 induces the dissociation of FARP2 from plexin-A1, thereby activating FARP2's Rac GEF activity which is critical for repulsion of outgrowing axons and suppression of neuronal adhesion. Downregulation of the FARP2 gene has been implicated in autism.

REFERENCES

1. Kubo, T., et al. 2002. A novel FERM domain including guanine nucleotide exchange factor is involved in Rac signaling and regulates neurite remodeling. J. Neurosci. 22: 8504-8513.
2. Kawakita, A., et al. 2003. Developmental regulation of FERM domain including guanine nucleotide exchange factor gene expression in the mouse brain. Brain Res. Dev. Brain Res. 144: 181-189.
3. Madura, T., et al. 2003. Expression of FERM domain including guanine nucleotide exchange factor mRNA in adult rat brain. Brain Res. Mol. Brain Res. 114: 163-167.
4. Toyofuku, T., et al. 2005. FARP2 triggers signals for Sema3A-mediated axonal repulsion. Nat. Neurosci. 8: 1712-1719.
5. Felder, B., et al. 2009. FARP2, HDLBP and PASK are downregulated in a patient with autism and 2q37.3 deletion syndrome. Am. J. Med. Genet. A 149A: 952-959.
6. Zhuang, B., et al. 2009. FARP1 promotes the dendritic growth of spinal motor neuron subtypes through transmembrane Semaphorin6A and PlexinA4 signaling. Neuron 61: 359-372.
7. Takegahara, N., et al. 2010. Integral roles of a guanine nucleotide exchange factor, FARP2, in osteoclast podosome rearrangements. FASEB J. 24: 4782-4792.

CHROMOSOMAL LOCATION

Genetic locus: FARP2 (human) mapping to 2q37.3.

PRODUCT

FARP2 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 FARP2 shRNA Plasmid (h): sc-94823-SH and FARP2 shRNA (h) Lentiviral Particles: sc-94823-V as alternate gene silencing products.

For independent verification of FARP2 (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-94823A, sc-94823B and sc-94823C.

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

FARP2 siRNA (h) is recommended for the inhibition of FARP2 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.

GENE EXPRESSION MONITORING

FARP2 (H-9): sc-390744 is recommended as a control antibody for monitoring of FARP2 gene expression knockdown by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) or immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor FARP2 gene expression knockdown using RT-PCR Primer: FARP2 (h)-PR: sc-94823-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.