SANTA CRUZ BIOTECHNOLOGY, INC.

EOMES siRNA (h): sc-77277

BACKGROUND

EOMES (eomesodermin homolog), also known as TBR2 (T-box-brain2), is the 686 amino acid human homolog of the mouse Eomes protein that contains one T-box DNA-binding domain. Genes that contain T-box domains encode proteins that function as transcription factors and are often involved in the regulation of various developmental events. Localized to the nucleus and expressed in the developing brain, EOMES is thought to be involved in neuronal migration and division and may play a role in trophoblast development and gastrulation. Silencing of the EOMES gene can cause mutated or arrested development and may lead to microcephaly disorders, which are characterized by reduced head circumference and a malformed brain.

REFERENCES

1. Kimura, N., et al. 1999. A novel mammalian T-box-containing gene, TBR2, expressed in mouse developing brain. Brain Res. Dev. Brain Res. 115: 183-193.
2. Yi, C.H., et al. 1999. Identification, mapping, and phylogenomic analysis of four new human members of the T-box gene family: EOMES, TBX6, TBX18, and TBX19. Genomics 55: 10-20.
3. Ueno, M., et al. 2000. Genomic organization, sequence and chromosomal localization of the mouse Tbr2 gene and a comparative study with Tbr1. Gene 254: 29-35.
4. Russ, A.P., et al. 2000. Eomesodermin is required for mouse trophoblast development and mesoderm formation. Nature 404: 95-99.
5. Pearce, E.L., et al. 2003. Control of effector $CD8^+$ T cell function by the transcription factor Eomesodermin. Science 302: 1041-1043.
6. Intlekofer, A.M., et al. 2005. Effector and memory $CD8^+$ T cell fate coupled by T-bet and eomesodermin. Nat. Immunol. 6: 1236-1244.
7. Baala, L., et al. 2007. Homozygous silencing of T-box riptionfactor EOMES leads to microcephaly with polymicrogyria and corpus callosum agenesis. Nat. Genet. 39: 454-456.

CHROMOSOMAL LOCATION

Genetic locus: EOMES (human) mapping to 3p24.1.

PRODUCT

EOMES 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 EOMES shRNA Plasmid (h): sc-77277-SH and EOMES shRNA (h) Lentiviral Particles: sc-77277-V as alternate gene silencing products.

For independent verification of EOMES (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-77277A, sc-77277B and sc-77277C.

PROTOCOLS

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

EOMES siRNA (h) is recommended for the inhibition of EOMES 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

EOMES (1A8): sc-293481 is recommended as a control antibody for monitoring of EOMES 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 EOMES gene expression knockdown using RT-PCR Primer: EOMES (h)-PR: sc-77277-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.