SANTA CRUZ BIOTECHNOLOGY, INC.

Aiolos siRNA (h): sc-93817

BACKGROUND

Ikaros family members, including Ikaros and Helios, are nuclear factors that colocalize with DNA replication machinery components in higher-order chromatin structures and respond to signaling events, such as T cell activation. Helios and Ikaros bind to similar DNA sequences and they function as hemopoietic-specific transcription factors. Members of the Ikaros family contain zinc-finger domains that are involved in DNA-binding and in the formation of homodimers and heterodimers between Ikaros family members. Aiolos, also known as zinc finger protein Ikaros 3 or ZNFN1A3, is a 509 amino acid nuclear protein. Aiolos plays an important role in lymphocyte differentiation regulation and, via this role, mutated Aiolos is implicated in leukemogenesis. Expressed in most tissues, Aiolos is predominantly found in spleen, thymus and peripheral blood leukocytes. Aiolos contains six C_2H_2-type zinc fingers, a motif commonly involved in nucleotide binding. Aiolos interacts with Ikaros family members, including Eos and Pegasus.

REFERENCES

1. Wang, J.H., et al. 1998. Aiolos regulates B cell activation and maturation to effector state. Immunity 9: 543-553.
2. Hosokawa, Y., et al. 1999. Human aiolos, an ikaros-related zinc finger DNA binding protein: cDNA cloning, tissue expression pattern, and chromosomal mapping. Genomics 61: 326-329.
3. Perdomo, J., et al. 2000. Eos and pegasus, two members of the Ikaros family of proteins with distinct DNA binding activities. J. Biol. Chem. 275: 38347-38354.
4. Liippo, J., et al. 2001. Both normal and leukemic B lymphocytes express multiple isoforms of the human Aiolos gene. Eur. J. Immunol. 31: 3469-3474.
5. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 606221. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
6. Sun, J., et al. 2003. Lack of the transcriptional coactivator OBF-1 prevents the development of systemic lupus erythematosus-like phenotypes in Aiolos mutant mice. J. Immunol. 170: 1699-1706.

CHROMOSOMAL LOCATION

Genetic locus: IKZF3 (human) mapping to 17q12.

PRODUCT

Aiolos 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 Aiolos shRNA Plasmid (h): sc-93817-SH and Aiolos shRNA (h) Lentiviral Particles: sc-93817-V as alternate gene silencing products.

For independent verification of Aiolos (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-93817A, sc-93817B and sc-93817C.

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

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

Aiolos (3H5-G7): sc-293421 is recommended as a control antibody for monitoring of Aiolos 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 Aiolos gene expression knockdown using RT-PCR Primer: Aiolos (h)-PR: sc-93817-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.