SANTA CRUZ BIOTECHNOLOGY, INC.

ZBP1 siRNA (m): sc-61823

BACKGROUND

Left-handed Z-DNA is a higher energy form of the double helix. Proteins containing Zα domains share a remarkable ability to bind specifically to Z-DNA and/or Z-RNA. ZBP1 (Z-DNA binding protein 1), also designated DLM-1, is a 429 amino acid protein that harbors two copies of the Zα domain containing the Zα motif at its N-terminus. ZBP1 is involved in host responses against cellular stresses, including tumorigenesis and viral infection. It is highly expressed in lymphatic tissues including leukocytes, lymph node, tonsil, bone marrow, spleen and, to a lesser extent, in thymus, lung and liver. There are five known isoforms of human ZBP1. The ZBP1 protein shares 47% and 46% sequence identity with the mouse and rat homologs, respectively. The mouse, rat, and human ZBP1 proteins all contain four conserved regions, two of which are homologous to the Z-DNA binding domains Zα and Zβ of the RNA editing enzyme ADAR1.

REFERENCES

1. Rich, A., et al. 1984. The chemistry and biology of left-handed Z-DNA. Annu. Rev. Biochem. 53: 791-846.
2. Schwartz, T., et al. 1999. Crystal structure of the Zα domain of the human editing enzyme ADAR1 bound to left-handed Z-DNA. Science 284: 1841-1845.
3. Fu, Y., et al. 2000. Cloning of DLM-1, a novel gene using RNA differential display. Gene 240: 157-163.
4. Rothenburg, S., et al. 2002. Complex regulation of the human gene for the Z-DNA binding protein DLM-1. Nucleic Acids Res. 30: 993-1000.

CHROMOSOMAL LOCATION

Genetic locus: Zbp1 (mouse) mapping to 2 H3.

PRODUCT

ZBP1 siRNA (m) 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 ZBP1 shRNA Plasmid (m): sc-61823-SH and ZBP1 shRNA (m) Lentiviral Particles: sc-61823-V as alternate gene silencing products.

For independent verification of ZBP1 (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-61823A, sc-61823B and sc-61823C.

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

ZBP1 siRNA (m) is recommended for the inhibition of ZBP1 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.

GENE EXPRESSION MONITORING

ZBP1 (H-9): sc-271483 is recommended as a control antibody for monitoring of ZBP1 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 ZBP1 gene expression knockdown using RT-PCR Primer: ZBP1 (m)-PR: sc-61823-PR (20 µl, 459 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Zhu, W., et al. 2015. Pattern recognition receptor-initiated innate antiviral responses in mouse epididymal epithelial cells. J. Immunol. 194: 4825-4835.

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.