SANTA CRUZ BIOTECHNOLOGY, INC.

BIN2 siRNA (h): sc-96086

BACKGROUND

BAR proteins are characterized by a common N-terminal BAR (bin, amphiphysin and Rvs161/167) domain and are recognized as adaptor proteins that are involved in many cellular processes. BIN1 and BIN2 are BAR proteins that share 61% sequence similarity. BIN1 (Bridging integrator 1) is a ubiquitously expressed regulatory protein for synaptic vesicle endocytosis. BIN1 also interacts with the transcription factors c-Myc and MyoD, potentially functioning as a tumor suppressor. BIN2, also known as Breast cancer-associated protein 1, is a 565 amino acid protein that interacts with BIN1. In contrast to BIN1, BIN2 lacks tumor suppressor features as well as a c-Myc interacting region. BIN2 shows preferred expression in tissues of hematopoietic origin, with high levels found in spleen, thymus, colon, placenta, lymphoid and granulocytic cells. There are two isoforms of BIN2 that are produced as a result of alternative splicing events.

REFERENCES

1. Prendergast, G.C. 1999. Mechanisms of apoptosis by c-Myc. Oncogene 18: 2967-2987.
2. Ge, K., et al. 2000. Bin2, a functionally nonredundant member of the BAR adaptor gene family. Genomics 67: 210-220.
3. Elliott, K., et al. 2000. The c-Myc-interacting adaptor protein Bin1 activates a caspase-independent cell death program. Oncogene 19: 4669-4684.
4. DuHadaway, J.B., et al. 2001. Bin1 mediates apoptosis by c-Myc in transformed primary cells. Cancer Res. 61: 3151-3156.
5. Online Mendelian Inheritance in Man, OMIM™. 2001. Johns Hopkins University, Baltimore, MD. MIM Number: 605936. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
6. Habermann, B. 2004. The BAR-domain family of proteins: a case of bending and binding? EMBO Rep. 5: 250-255.
7. Gallop, J.L., et al. 2005. BAR domains and membrane curvature: bringing your curves to the BAR. Biochem. Soc. Symp. 223-231.
8. Blood, P.D., et al. 2006. Direct observation of Bin/amphiphysin/Rvs (BAR) domain-induced membrane curvature by means of molecular dynamics simulations. Proc. Natl. Acad. Sci. USA 103: 15068-15072.

CHROMOSOMAL LOCATION

Genetic locus: BIN2 (human) mapping to 12q13.

PRODUCT

BIN2 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 BIN2 shRNA Plasmid (h): sc-96086-SH and BIN2 shRNA (h) Lentiviral Particles: sc-96086-V as alternate gene silencing products.

For independent verification of BIN2 (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-96086A, sc-96086B and sc-96086C.

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

BIN2 siRNA (h) is recommended for the inhibition of BIN2 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

BIN2 (E-2): sc-376391 is recommended as a control antibody for monitoring of BIN2 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 (secondary) reagents are recommended: 1) Western Blotting: use goat anti-mouse IgG-HRP: sc-2005 (dilution range: 1:2000-1:32,000) or Cruz Marker™ compatible goat anti-mouse IgG-HRP: sc-2031 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use goat anti-mouse IgG-FITC: sc-2010 (dilution range: 1:100-1:400) or goat anti-mouse IgG-TR: sc-2781 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor BIN2 gene expression knockdown using RT-PCR Primer: BIN2 (h)-PR: sc-96086-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.