SANTA CRUZ BIOTECHNOLOGY, INC.

Bag-1 siRNA (h): sc-29211

BACKGROUND

The Bcl-2 family of proteins is characterized by its ability to modulate cell death (apoptosis) under a broad range of physiologic conditions. Bcl-2 and several related proteins function to inhibit apoptosis, while other members of the Bcl-2 family, such as Bax and Bak, enhance cell death under various conditions. For instance, Bcl-x_L represses cell death, while its shorter form, Bcl-x_S, promotes apoptosis. Dimerization of another member of this family, Bad, with Bcl-x_L, results in displacement of Bax from Bcl-x_L/Bax complexes and restoration of Bax-mediated apoptosis. A Bcl-2-binding protein, designated Bag-1, lacks significant homology with Bcl-2 or with other Bcl-2-related proteins. Bag-1 appears to function to enhance Bcl-2 protection from cell death, suggesting that Bag-1 represents a new type of anti-cell death gene. This also suggests that certain routes of apoptosis induction, previously as-cribed to Bcl-2-independent pathways, may instead reflect a requirement for a combination of Bcl-2 and Bag-1.

CHROMOSOMAL LOCATION

Genetic locus: BAG1 (human) mapping to 9p13.3.

PRODUCT

Bag-1 siRNA (h) is a target-specific 19-25 nt siRNA 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 Bag-1 shRNA Plasmid (h): sc-29211-SH and Bag-1 shRNA (h) Lentiviral Particles: sc-29211-V as alternate gene silencing 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

Bag-1 siRNA (h) is recommended for the inhibition of Bag-1 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.

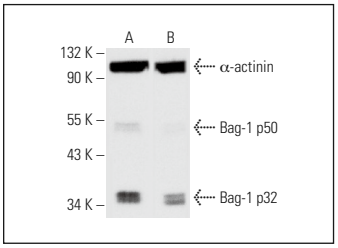
GENE EXPRESSION MONITORING

Bag-1 (E-11): sc-376848 is recommended as a control antibody for monitoring of Bag-1 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).

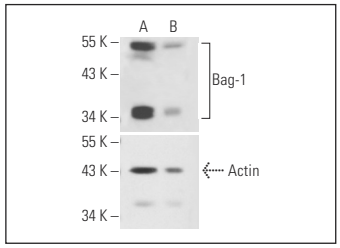
RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor Bag-1 gene expression knockdown using RT-PCR Primer: Bag-1 (h)-PR: sc-29211-PR (20 µl, 446 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

DATA



Bag-1 siRNA (h): sc-29211. Western blot analysis of Bag-1 expression in control non-transfected (**A**) and Bag-1 siRNA transfected (**B**) HeLa cells. Blot probed with Bag-1 (F-7): sc-25296. α-actinin (H-2): sc-17829 used as specificity and loading control.



Bag-1 siRNA (h): sc-29211. Western blot analysis of Bag-1 expression in non-transfected control (**A**) and Bag-1 siRNA transfected (**B**) HeLa cells. Blot probed with Bag-1 (F-7): sc-25296. Actin (I-19): sc-1616 used as specificity and loading control.

SELECT PRODUCT CITATIONS

1. Li, H.P., et al. 2015. Human cytomegalovirus inhibits apoptosis involving upregulation of the antiapoptotic protein Bag-1. J. Med. Virol. 87: 1953-1959.
2. Liu, S., et al. 2017. Over-expression of Bag-1 in head and neck squamous cell carcinomas (HNSCC) is associated with cisplatin-resistance. J. Transl. Med. 15: 189.
3. Kilbas, P.O., et al. 2019. Bag-1 silencing enhanced chemotherapeutic drug-induced apoptosis in MCF7 breast cancer cells affecting PI3K/Akt/mTOR and MAPK signaling pathways. Mol. Biol. Rep. 46: 847-860.
4. Kizilboga, T., et al. 2019. Bag-1 stimulates Bad phosphorylation through activation of Akt and Raf kinases to mediate cell survival in breast cancer. BMC Cancer 19: 1254.
5. Kilbas, P.O., et al. 2022. CRISPR/Cas9-mediated Bag-1 knockout increased mesenchymal characteristics of MCF7 cells via Akt hyperactivation-mediated actin cytoskeleton remodeling. PLoS ONE 17: e0261062.
6. Kizilboga, T., et al. 2024. Bag-1-mediated HSF1 phosphorylation regulates expression of heat shock proteins in breast cancer cells. FEBS Open Bio 14: 1559-1569.

RESEARCH USE

For research use only, not for use in diagnostic procedures.