SANTA CRUZ BIOTECHNOLOGY, INC.

# Bag-3 (19): sc-136467

SANTA CRUZ BIOTECHNOLOGY

*The Power to Question*

## BACKGROUND

The Bag family of proteins are characterized by the presence of a 45 amino acid Bag domain through which they bind with high affinity to the ATPase domain of HSP 70, thereby negatively regulating HSP 70 chaperone activity. Bag-3 (Bcl-2-associated athanogene 3), also known as BIS or CAIR-1, is a 575 amino acid protein that contains one C-terminal Bag domain and two N-terminal WW domains. Like other members of the Bag family, Bag-3 functions to inhibit the chaperone activity of HSP 70, specifically by promoting the release of HSP 70-bound substrates. Additionally, Bag-3 exhibits anti-apoptotic activity via cell cycle control, suggesting a possible role for Bag-3 in tumor progression. The gene encoding Bag-3 maps to human chromosome 10, which houses over 1,200 genes and comprises nearly 4.5% of the human genome.

## CHROMOSOMAL LOCATION

Genetic locus: BAG3 (human) mapping to 10q26.11; Bag3 (mouse) mapping to 7 F3.

## SOURCE

Bag-3 (19) is a mouse monoclonal antibody raised against a recombinant protein corresponding to amino acids 478-575 of Bag-3 of human origin.

## PRODUCT

Each vial contains 200 µg $IgG_1$ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Bag-3 (19) is available conjugated to agarose (sc-136467 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; and to HRP (sc-136467 HRP), 200 µg/ml, for WB, IHC(P) and ELISA.

## STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

## RESEARCH USE

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

## APPLICATIONS

Bag-3 (19) is recommended for detection of Bag-3 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for Bag-3 siRNA (h): sc-72602, Bag-3 siRNA (m): sc-72603, Bag-3 shRNA Plasmid (h): sc-72602-SH, Bag-3 shRNA Plasmid (m): sc-72603-SH, Bag-3 shRNA (h) Lentiviral Particles: sc-72602-V and Bag-3 shRNA (m) Lentiviral Particles: sc-72603-V.

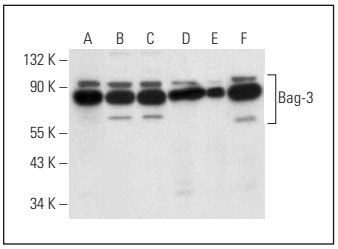
Molecular Weight of Bag-3: 80 kDa.

Positive Controls: A-431 whole cell lysate: sc-2201, DU 145 cell lysate: sc-2268 or HeLa whole cell lysate: sc-2200.

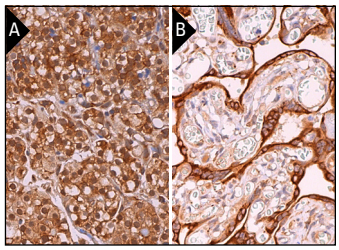
## RECOMMENDED SUPPORT REAGENTS

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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) 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. 4) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

## DATA




Bag-3 (19): sc-136467. Western blot analysis of Bag-3 expression in Hep G2 (**A**), HeLa (**B**), MCF7 (**C**), DU 145 (**D**), A-431 (**E**) and Jurkat (**F**) whole cell lysates.




Bag-3 (19): sc-136467. Immunoperoxidase staining of formalin fixed, paraffin-embedded human parathyroid gland tissue showing cytoplasmic and nuclear staining of glandular cells (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human placenta tissue showing cytoplasmic and membrane staining of trophoblastic cells (**B**).

## SELECT PRODUCT CITATIONS


1. Li, X., et al. 2015. Validation of the Hsp70-Bag3 protein-protein interaction as a potential therapeutic target in cancer. Mol. Cancer Ther. 14: 642-648.
2. Nitika., et al. 2020. Chemogenomic screening identifies the Hsp70 co-chaperone DNAJA1 as a hub for anticancer drug resistance. Sci. Rep. 10: 13831.
3. Kim Guisbert, K.S., et al. 2020. Titration of SF3B1 activity reveals distinct effects on the transcriptome and cell physiology. Int. J. Mol. Sci. 21: 9641.
4. Martin, T.G., et al. 2021. Cardiomyocyte contractile impairment in heart failure results from reduced BAG3-mediated sarcomeric protein turnover. Nat. Commun. 12: 2942.
5. Oron, M., et al. 2022. The molecular network of the proteasome machinery inhibition response is orchestrated by HSP 70, revealing vulnerabilities in cancer cells. Cell Rep. 40: 111428.
6. Chen, X., et al. 2022. Methicillin-resistant *Staphylococcus aureus* membrane vesicles inhibit the proliferation and induce the apoptosis of epithelial cells. Pathogens 11: 1429.


## PROTOCOLS

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