SANTA CRUZ BIOTECHNOLOGY, INC.

BIP (at-95): sc-33757

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Arabidopsis growth is regulated by a wide variety of proteins that control cellular functions, such as the cell cycle, metabolism, cell signaling and survival. Many of these regulatory proteins control the expression of specific proteins through transcriptional regulation. In the nucleus, the 14-3-3 protein, which is highly conserved among plants, animals and yeast, mediates gene expression by direct protein interactions with transcriptional regulators, including the TATA-box binding protein (TBP) and the transcription factor IIB (TFIIB). In the cytosol, the 14-3-3 protein is involved in the nutrient-sensing pathway by controlling the cleavage of target proteins. Also, the 14-3-3 protein is a positive regulator of the plant plasma membrane H^+-ATPase. The carboxy terminal autoinhibitory domain of the H^+-ATPase is displaced upon binding with the 14-3-3 protein. Other regulatory proteins include the luminal binding protein (BiP), which is a molecular chaperone whose expression is induced in response to tunicamycin and heat-shock stress.

REFERENCES

1. Koizumi, N. 1996. Isolation and responses to stress of a gene that encodes a luminal binding protein in *Arabidopsis thaliana*. Plant Cell Physiol. 37: 862-865.
2. Jahn, T., et al. 1997. The 14-3-3 protein interacts directly with the C-terminal region of the plant plasma membrane H^+-ATPase. Plant Cell 9: 1805-1814.

SOURCE

BIP (at-95) is a rabbit polyclonal antibody raised against amino acids 541-635 mapping near the C-terminus of BIP of *Arabidopsis thaliana* origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

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

BIP (at-95) is recommended for detection of BIP of *Arabidopsis thaliana, Nicotiana tabacum, Zea mays and Lycopersicon esculentum* 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 solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

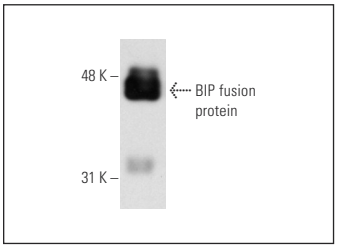
Molecular Weight of BIP: 74 kDa.

Positive Controls: *Arabidopsis* whole cell lysate.

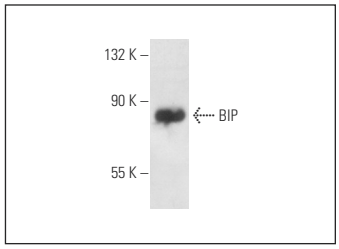
RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

DATA



BIP (at-95): sc-33757. Western blot analysis of *arabidopsis* recombinant BIP fusion protein.



BIP (at-95): sc-33757. Western blot analysis of BIP expression in *Arabidopsis* whole cell lysate.

SELECT PRODUCT CITATIONS

1. Cho, D.Y., et al. 2003. Molecular chaperone GRP78/BiP interacts with the large surface protein of hepatitis B virus *in vitro* and *in vivo*. J. Virol. 77: 2784-2788.
2. William, B.L., et al. 2006. Endoplasmic reticulum stress and neurodegeneration in rats neonatally infected with Borna disease virus. J. Virol. 80: 8613-8626.
3. Mulhern, M.L., et al. 2007. Cellular osmolytes reduce lens epithelial cell death and alleviate cataract formation in galactosemic rats. Mol. Vis. 13: 1397-1405.
4. Feugang, J.M., et al. 2009. Two-stage genome-wide association study identifies integrin β 5 as having potential role in bull fertility. BMC Genomics 10: 176.
5. Schnell, J.A., et al. 2010. Soybean peroxidase propeptides are functional signal peptides and increase the yield of a foreign protein. Plant Cell Rep. 29: 987-996.
6. Zheng, X.Y., et al. 2015. Attenuation of oxygen fluctuation-induced endoplasmic reticulum stress in human lens epithelial cells. Exp. Ther. Med. 10: 1883-1887.
7. Qi, W., et al. 2016. Maize reas1 Mutant stimulates ribosome use efficiency and triggers distinct transcriptional and translational responses. Plant Physiol. 170: 971-988.