SANTA CRUZ BIOTECHNOLOGY, INC.

BIG2 (H-6): sc-398042

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Guanine nucleotide-exchange proteins (GEPs) accelerate replacement of bound GDP with GTP and thereby activate ADP-ribosylation factors (ARFs), a family of guanine nucleotide-binding proteins that play an important role in intracellular vesicular trafficking. GEPs comprise two major families, large GEPs that are inhibited by brefeldin A (BFA), a protein that effects Golgi structure and a group of smaller GEPs that are insenstive to BFA. Two genes for GEPs found on human chromosomes 8 and 20 encode BFA sensitive GEPs designated BIG1 and BIG2. Both GEPS contain a sec7 domain that is responsible for their brefeldin inhibition and also their catalytic activity. *In vivo,* BIG1 and BIG2 exist in macromolecular complexes that move between the Golgi membranes and cytosol. BIG2 associates with PKA regulatory subunits, implying that BIG2 may act as an A kinase-anchoring protein (AKAP) that could coordinate the cAMP and ARF regulatory pathways.

REFERENCES

1. Togawa, A., et al. 1999. Purification and cloning of a brefeldin A-inhibited guanine nucleotide-exchange protein for ADP-ribosylation factors. J. Biol. Chem. 274: 12308-12315.
2. Li, H., et al. 2003. Protein kinase A-anchoring (AKAP) domains in brefeldin A-inhibited guanine nucleotide-exchange protein 2 (BIG2). Proc. Natl. Acad. Sci. USA 100: 1627-1632.
3. Padilla, P.I., et al. 2003. Interaction of FK506-binding protein 13 with brefeldin A-inhibited guanine nucleotide-exchange protein 1 (BIG1): effects of FK506. Proc. Natl. Acad. Sci. USA 100: 2322-2327.

CHROMOSOMAL LOCATION

Genetic locus: ARFGEF2 (human) mapping to 20q13.13.

SOURCE

BIG2 (H-6) is a mouse monoclonal antibody raised against amino acids 585-636 mapping within an internal region of BIG2 of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

BIG2 (H-6) is available conjugated to agarose (sc-398042 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-398042 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-398042 PE), fluorescein (sc-398042 FITC), Alexa Fluor® 488 (sc-398042 AF488), Alexa Fluor® 546 (sc-398042 AF546), Alexa Fluor® 594 (sc-398042 AF594) or Alexa Fluor® 647 (sc-398042 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-398042 AF680) or Alexa Fluor® 790 (sc-398042 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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STORAGE

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

APPLICATIONS

BIG2 (H-6) is recommended for detection of BIG2 of human origin by Western Blotting (starting dilution 1:100, 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).

Suitable for use as control antibody for BIG2 siRNA (h): sc-105121, BIG2 shRNA Plasmid (h): sc-105121-SH and BIG2 shRNA (h) Lentiviral Particles: sc-105121-V.

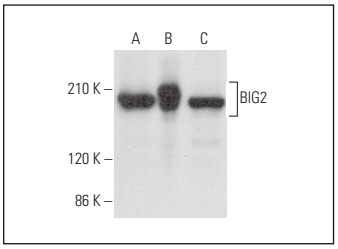
Molecular Weight of BIG2: 202 kDa.

Positive Controls: A549 cell lysate: sc-2413, HeLa whole cell lysate: sc-2200 or A-375 cell lysate: sc-3811.

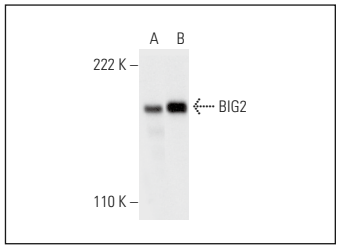
RECOMMENDED SUPPORT REAGENTS

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.

DATA



BIG2 (H-6): sc-398042. Western blot analysis of BIG2 expression in HeLa (**A**), A-375 (**B**) and Caco-2 (**C**) whole cell lysates.



BIG2 (H-6): sc-398042. Western blot analysis of BIG2 expression in A549 (**A**) and HeLa (**B**) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Ramírez-Peinado, S., et al. 2017. TRAPPC13 modulates autophagy and the response to Golgi stress. J. Cell Sci. 130: 2251-2265.

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.