SANTA CRUZ BIOTECHNOLOGY, INC.

BIG1 (G-3): sc-376790



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.
- Li, H., et al. 2003. Protein kinase A-anchoring (AKAP) domains in brefeldin Ainhibited 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: ARFGEF1 (human) mapping to 8q13.2; Arfgef1 (mouse) mapping to 1 A2.

SOURCE

BIG1 (G-3) is a mouse monoclonal antibody raised against amino acids 285-419 mapping within an internal region of BIG1 of human origin.

PRODUCT

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

BIG1 (G-3) is available conjugated to agarose (sc-376790 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-376790 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-376790 PE), fluorescein (sc-376790 FITC), Alexa Fluor[®] 488 (sc-376790 AF488), Alexa Fluor[®] 546 (sc-376790 AF546), Alexa Fluor[®] 594 (sc-376790 AF594) or Alexa Fluor[®] 647 (sc-376790 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor[®] 680 (sc-376790 AF680) or Alexa Fluor[®] 790 (sc-376790 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

BIG1 (G-3) is recommended for detection of BIG1 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g 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 BIG1 siRNA (h): sc-43632, BIG1 siRNA (m): sc-44440, BIG1 shRNA Plasmid (h): sc-43632-SH, BIG1 shRNA Plasmid (m): sc-44440-SH, BIG1 shRNA (h) Lentiviral Particles: sc-43632-V and BIG1 shRNA (m) Lentiviral Particles: sc-44440-V.

Molecular Weight of BIG1: 209 kDa.

Positive Controls: mouse lung extract: sc-2390.

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





BIG1 (G-3): sc-376790. Western blot analysis of BIG1 expression in mouse lung tissue extract.

BIG1 (G-3): sc-376790. Immunofluorescence staining of methanol-fixed NIH/3T3 cells showing cytoplasmic localization.

SELECT PRODUCT CITATIONS

- Teoh, J.J., et al. 2017. BIG1 is required for the survival of deep layer neurons, neuronal polarity, and the formation of axonal tracts between the thalamus and neocortex in developing brain. PLoS ONE 12: e0175888.
- Teoh, J., et al. 2020. Arfgef1 haploinsufficiency in mice alters neuronal endosome composition and decreases membrane surface postsynaptic GABA_Δ receptors. Neurobiol. Dis. 134: 104632.

RESEARCH USE

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