

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 insensitive 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: 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 IgG_{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 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 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.

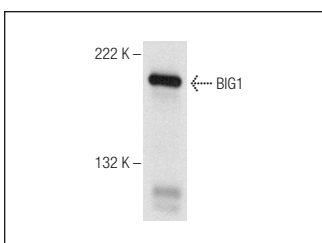
Molecular Weight of BIG1: 209 kDa.

Positive Controls: mouse lung extract: sc-2390.

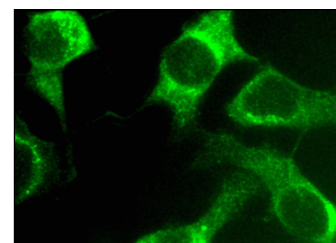
RECOMMENDED SUPPORT REAGENTS

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

1. 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.
2. Teoh, J., et al. 2020. Arfgef1 haploinsufficiency in mice alters neuronal endosome composition and decreases membrane surface postsynaptic GABA_A receptors. *Neurobiol. Dis.* 134: 104632.

RESEARCH USE

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