SANTA CRUZ BIOTECHNOLOGY, INC.

GGA1 (Q-27): sc-101257

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The GGA family of proteins (Golgi-localized, γ-adaptin ear-containing, ARF-binding proteins) are ubiquitous coat proteins that facilitate the trafficking of soluble proteins from the *trans*-Golgi network (TGN) to endosomes/lysosomes by means of interactions with TGN-sorting receptors, ARF (ADP-ribosylation factor) and Clathrin. Members of the GGA family, GGA1, GGA2 (also known as VEAR) and GGA3, are multidomain proteins that bind mannose 6-phosphate receptors (MPRs). GGAs have modular structures with an N-terminal VHS (VPS-27, Hrs and STAM) domain followed by a GAT (GGA and TOM1) domain, a connecting hinge segment and a C-terminal GAE (γ-adaptin ear) domain. The amino-terminal VHS domains of GGAs form complexes with the cytoplasmic domains of sorting receptors by recognizing acidic-cluster dileucine (ACLL) sequences. GGA1 and GGA2 do not associate with each other, but they do co-localize on perinuclear membranes. The cytosolic domain of memapsin 2, but not that of memapsin 1, binds the VHS domains of GGA1 and GGA2. The human GGA1 gene maps to chromosome 22 and encodes a protein that shares 45% sequence identity with GGA2 and GGA3.

REFERENCES

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2. Shiba, T., Takatsu, H., Nogi, T., Matsugaki, N., Kawasaki, M., Igarashi, N., Suzuki, M., Kato, R., Earnest, T., Nakayama, K. and Wakatsuki, S. 2002. Structural basis for recognition of acidic-cluster dileucine sequence by GGA1. Nature 415: 937-941.
3. Doray, B., Ghosh, P., Griffith, J., Geuze, H.J. and Kornfeld, S. 2002. Cooperation of GGAs and AP-1 in packaging MPRs at the *trans*-Golgi network. Science 297: 1700-1703.
4. Doray, B., Bruns, K., Ghosh, P. and Kornfeld, S.A. 2002. Autoinhibition of the ligand-binding site of GGA1/3 VHS domains by an internal acidic cluster-dileucine motif. Proc. Natl. Acad. Sci. USA 99: 8072-8077.

CHROMOSOMAL LOCATION

Genetic locus: GGA1 (human) mapping to 22q13.1; Gga1 (mouse) mapping to 15 E1.

SOURCE

GGA1 (Q-27) is a mouse monoclonal antibody raised against recombinant GGA1 of human origin.

PRODUCT

Each vial contains 100 µg IgG in 1.0 ml 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.

APPLICATIONS

GGA1 (Q-27) is recommended for detection of GGA1 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), immunohistochemistry (including paraffin-embedded sections) (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 GGA1 siRNA (h): sc-41167, GGA1 siRNA (m): sc-41168, GGA1 shRNA Plasmid (h): sc-41167-SH, GGA1 shRNA Plasmid (m): sc-41168-SH, GGA1 shRNA (h) Lentiviral Particles: sc-41167-V and GGA1 shRNA (m) Lentiviral Particles: sc-41168-V.

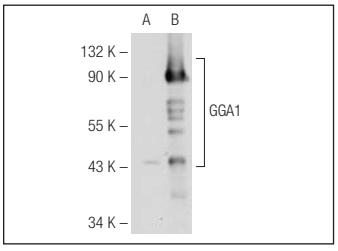
Molecular Weight of GGA1: 75 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, Jurkat whole cell lysate: sc-2204 or GGA1 (h2): 293T Lysate: sc-128702.

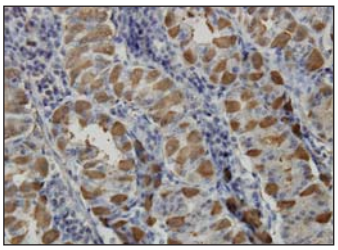
RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-mouse IgG-HRP: sc-2005 (dilution range: 1:2000-1:32,000) or Cruz Marker™ compatible goat anti-mouse IgG-HRP: sc-2031 (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-mouse IgG-FITC: sc-2010 (dilution range: 1:100-1:400) or goat anti-mouse IgG-TR: sc-2781 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941. 4) Immunohistochemistry: use ImmunoCruz™: sc-2050 or ABC: sc-2017 mouse IgG Staining Systems.

DATA



GGA1 (Q-27): sc-101257. Western blot analysis of GGA1 expression in non-transfected: sc-117752 (**A**) and human GGA1 transfected: sc-128702 (**B**) 293T whole cell lysates.



GGA1 (Q-27): sc-101257. Immunoperoxidase staining of formalin-fixed, paraffin-embedded human stomach tissue showing membrane and cytoplasmic localization.

RESEARCH USE

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

PROTOCOLS

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