

GGA3 (8): sc-135923

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 multi-domain proteins that bind mannose 6-phosphate receptors (MPRs). GGAs have modular structures with an N-terminal VHS (Vps27, 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 di-leucine (ACLL) sequences. The human GGA3 gene maps to chromosome 17 and encodes a 723 amino acid protein that shares 46% sequence identity with GGA1 and 38% with GGA2.

REFERENCES

- Hirst, J., et al. 2000. A family of proteins with γ -Adaptin and VHS domains that facilitate trafficking between the *trans*-Golgi network and the vacuole/lysosome. *J. Cell Biol.* 149: 67-80.
- Dell'Angelica, E.C., et al. 2000. GGAs: a family of ADP ribosylation factor-binding proteins related to adaptors and associated with the Golgi complex. *J. Cell Biol.* 149: 81-94.
- Shiba, T., et al. 2002. Structural basis for recognition of acidic-cluster dileucine sequence by GGA1. *Nature* 415: 937-941.
- Doray, B., et al. 2002. Cooperation of GGAs and AP-1 in packaging MPRs at the *trans*-Golgi network. *Science* 297: 1700-1703.
- Doray, B., et al. 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.
- Takatsu, H., et al. 2002. GGA proteins associate with Golgi membranes through interaction between their GGAH domains and ADP-ribosylation factors. *Biochem. J.* 365: 369-378.
- LocusLink Report (LocusID: 606004). <http://www.ncbi.nlm.nih.gov/LocusLink/>

CHROMOSOMAL LOCATION

Genetic locus: GGA3 (human) mapping to 17q25.1.

SOURCE

GGA3 (8) is a mouse monoclonal antibody raised against amino acids 424-542 of GGA3 of human origin.

PRODUCT

Each vial contains 200 μ g IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

RESEARCH USE

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

APPLICATIONS

GGA3 (8) is recommended for detection of GGA3 of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)] and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for GGA3 siRNA (h): sc-41171, GGA3 shRNA Plasmid (h): sc-41171-SH and GGA3 shRNA (h) Lentiviral Particles: sc-41171-V.

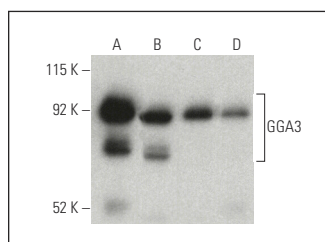
Molecular Weight of GGA3: 90 kDa.

Positive Controls: Jurkat whole cell lysate: sc-2204, HEL 92.1.7 cell lysate: sc-2270 or MOLT-4 cell lysate: sc-2233.

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ 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-IgG κ BP-FITC: sc-516140 or m-IgG κ 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



GGA3 (8): sc-135923. Western blot analysis of GGA3 expression in Jurkat (A), MOLT-4 (B) and HEL 92.1.7 (C) whole cell lysates and human heart tissue extract (D). Detection reagent used: m-IgG κ BP-HRP: sc-516102.



GGA3 (8): sc-135923. Immunofluorescence staining of human endothelial cells showing cytoplasmic localization.

SELECT PRODUCT CITATIONS

- Hu, C.T., et al. 2015. PKC ϵ -mediated c-Met endosomal processing directs fluctuant c-Met-JNK-paxillin signaling for tumor progression of Hep G2. *Cell. Signal.* 27: 1544-1555.
- Obata, Y., et al. 2023. Golgi retention and oncogenic KIT signaling via PLC γ 2-PKD2-PI4KIII β activation in gastrointestinal stromal tumor cells. *Cell Rep.* 42: 113035.

STORAGE

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