SANTA CRUZ BIOTECHNOLOGY, INC.

GGA2 (27): sc-135922

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

A family of proteins, the GGAs (Golgi-localized, γ-adaptin ear-containing, ARF-binding proteins) sequences that showed significant homology to the carboxy-terminal "ear" domain of γ-adaptin. Members of the GGA family (GGA1, GGA2 (also known as VEAR or VHS domain and ear domain of γ-adaptin) and GGA3) are ubiquitous coat proteins that facilitate the trafficking of proteins between the *trans*-Golgi network and the lysosome. However, unlike γ-adaptin, the GGAs are not associated with clathrin-coated vesicles or with any of the components of the AP-1 complex. GGA1 and GGA2 are also not associated with each other, although they co-localize on perinuclear membranes. GGA2 shares 45% amino acid sequence identity with GGA1 and 35% with GGA3. In addition to being involved in heterotypic vesicle/suborganelle interactions associated with the Golgi complex, GGA2 may have a tissue-specific function and is highly expressed in kidney, muscle and heart. Furthermore, the VHS domain of GGA2 binds to the acidic cluster-di-leucine motif in the cytoplasmic tail of the cation-independent mannose 6-phosphate receptor (CI-MPR) and this is important for lysosomal enzyme targeting.

REFERENCES

1. Hirst, J., Lui, 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.
2. Poussu, A., et al. 2000. Vear, a novel Golgi-associated protein with VHS and γ-adaptin "ear" domains. J. Biol. Chem. 275: 7176-7183.
3. Zhu, Y., et al. 2001. Binding of GGA2 to the lysosomal enzyme sorting motif of the mannose 6-phosphate receptor. Science 292: 1716-1718.
4. Nielsen, M.S., et al. 2001. The sortilin cytoplasmic tail conveys Golgi-endosome transport and binds the VHS domain of the GGA2 sorting protein. EMBO J. 20: 2180-2190.
5. He, X., et al. 2002. Memapsin 2 (β-secretase) cytosolic domain binds to the VHS domains of GGA1 and GGA2: implications on the endocytosis mechanism of memapsin 2. FEBS Lett. 524: 183-187.
6. Zhu, G., et al. 2003. Crystal structure of GGA2 VHS domain and its implication in plasticity in the ligand binding pocket. FEBS Lett. 537: 171-176.
7. LocusLink Report (LocusID: 606004). http://www.ncbi.nlm.nih.gov/LocusLink/

CHROMOSOMAL LOCATION

Genetic locus: GGA2 (human) mapping to 16p12.1.

SOURCE

GGA2 (27) is a mouse monoclonal antibody raised against amino acids 334-445 of GGA2 of human origin.

PRODUCT

Each vial contains 50 µg IgG_1 in 500 µl PBS with < 0.1% sodium azide, 0.1% gelatin, 20% glycerol and 0.04% BSA.

RESEARCH USE

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

APPLICATIONS

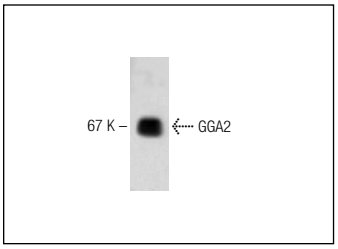
GGA2 (27) is recommended for detection of GGA2 of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)] and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for GGA2 siRNA (h): sc-41169, GGA2 shRNA Plasmid (h): sc-41169-SH and GGA2 shRNA (h) Lentiviral Particles: sc-41169-V.

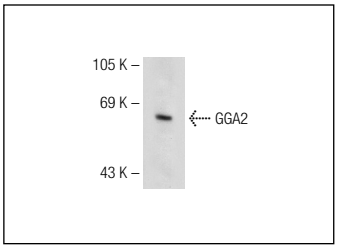
Molecular Weight of GGA2: 67 kDa.

Positive Controls: EB1 cell lysate: sc-24668, HeLa whole cell lysate: sc-2200 or Jurkat whole cell lysate: sc-2204.

DATA



GGA2 (27): sc-135922. Western blot analysis of GGA2 expression in EB1 whole cell lysate.



GGA2 (27): sc-135922. Western blot analysis of GGA2 expression in HeLa whole cell lysate.

STORAGE

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

PROTOCOLS

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