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SZABO-SCANDIC HandelsgmbH

Quellenstraße 110, A-1100 Wien

T. +43(0)1 489 3961-0

F. +43(0)1 489 3961-7

mail@szabo-scandic.com

www.szabo-scandic.com

[linkedin.com/company/szaboscandic](https://www.linkedin.com/company/szaboscandic) 

GGA1 (m): 293T Lysate: sc-120473

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

- Hirst, J., Lui, W.W., Bright, N.A., Totty, N., Seaman, M.N. and Robinson, M.S. 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.
- 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.
- 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.
- 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 (mouse) mapping to 15 E1.

PRODUCT

GGA1 (m): 293T Lysate represents a lysate of mouse GGA1 transfected 293T cells and is provided as 100 μ g protein in 200 μ l SDS-PAGE buffer.

APPLICATIONS

GGA1 (m): 293T Lysate is suitable as a Western Blotting positive control for mouse reactive GGA1 antibodies. Recommended use: 10-20 μ l per lane.

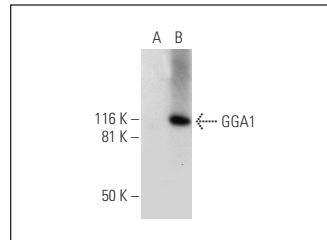
Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

GGA1 (A-1): sc-390837 is recommended as a positive control antibody for Western Blot analysis of enhanced mouse GGA1 expression in GGA1 transfected 293T cells (starting dilution 1:100, dilution range 1:100-1:1,000).

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.

DATA



GGA1 (A-1): sc-390837. Western blot analysis of GGA1 expression in non-transfected: sc-117752 (A) and mouse GGA1 transfected: sc-120473 (B) 293T whole cell lysates.

STORAGE

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. Non-hazardous. No MSDS required.

RESEARCH USE

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

PROTOCOLS

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