SANTA CRUZ BIOTECHNOLOGY, INC.

# GOA-1 (cP-14): sc-32685

## BACKGROUND

GOA-1, the $G_{\alpha\,0}$ subunit of a heterotrimeric G protein complex, is involved in asymmetric cell division in *C. elegans*. Specifically, GOA-1 assists in the positioning of spindle fibers in one-celled *C. elegans* embryos. Proper spindle fiber positioning also depends upon the interaction of GOA-1 in its GDP bound form to the receptor independent G protein activators GPR-1 and GPR-2, as well as the protein RIC-8, a guanine nucleotide exchange factor (GEF). GOA-1 is localized to the cell cortex and is found in most neurons. Additionally, muscles involved with male mating and egg laying are sites of GOA-1 expression in *C. elegans*. Mutations in the gene coding for GOA-1 are associated with a variety of deficits mimicking serotonin deficiency in *C. elegans*, including male impotence, premature egg laying and hyperactive movement. EGL-10 is an regulator of G protein signaling (RGS) protein that can selectively inhibit GOA-1 function through activation of $G_{\alpha}$ GTPase.

## REFERENCES


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2. Mendel, J.E., et al. 1995. Participation of the protein $G_0$ in multiple aspects of behavior in *C. elegans*. Science 267: 1652-1655.
3. Miller, K.G., et al. 1999. $G_{o\alpha}$ and diacylglycerol kinase negatively regulate the $G_{q\alpha}$ pathway in *C. elegans*. Neuron 24: 323-333.
4. Miller, K.G., et al. 2000. A role for RIC-8 (Synembryn) and GOA-1 ($G_{o\alpha}$) in regulating a subset of centrosome movements during early embryogenesis in *Caenorhabditis elegans*. Genetics 156: 1649-1660.
5. van Swinderen, B., et al. 2001. $G_{o\alpha}$ regulates volatile anesthetic action in *Caenorhabditis elegans*. Genetics 158: 643-655.
6. Robatzek, M., et al. 2001. EAT-11 encodes GPB-2, a $G_{\beta 5}$ ortholog that interacts with $G_{o\alpha}$ and $G_{q\alpha}$ to regulate *C. elegans* behavior. Curr. Biol. 11: 288-293.
7. Gotta, M., et al. 2001. Distinct roles for $G_{\alpha}$ and $G_{\beta\gamma}$ in regulating spindle position and orientation in *Caenorhabditis elegans* embryos. Nat. Cell. Biol. 3: 297-300.
8. Patikoglou, G.A., et al. 2002. An N-terminal region of *Caenorhabditis elegans* RGS proteins EGL-10 and EAT-16 directs inhibition of $G_{o\alpha}$ versus $G_{q\alpha}$ signaling. J. Biol. Chem. 277: 47004-47013.
9. Manning, D.R., et al. 2003. Evidence mounts for receptor-independent activation of heterotrimeric G proteins normally *in vivo*: positioning of the mitotic spindle in *C. elegans*. Sci. STKE. 2003: 35.


## SOURCE

GOA-1 (cP-14) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of GOA-1 of *C. elegans* origin.

## STORAGE

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

## PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-32685 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

GOA-1 (cP-14) is recommended for detection of GOA-1 of *Caenorhabditis elegans* origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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).

Molecular Weight of GOA-1: 40 kDa.

## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (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) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

## 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.