

GCAP1 (FL-201): sc-366052

BACKGROUND

The intracellular stimulation of guanylate cyclase (GC) by calcium, a key event in the recovery of the dark state of rod photoreceptors after exposure to light, is mediated by guanylate cyclase-activating protein (GCAP1). GCAPs are calcium-binding proteins belonging to the calmodulin superfamily. GCAP1 is a calcium-binding protein that stimulates synthesis of c-GMP in photoreceptors. GCAP1 is present in rod and cone photoreceptor outer segments where phototransduction occurs. In contrast to other calcium-binding proteins from the calmodulin superfamily, the calcium-free form of GCAP1 stimulates the effector enzyme. By molecular cloning of human and mouse GCAP cDNA, the known mammalian GCAPs are found to be more than 90% similar, consisting of 201 to 205 amino acids, and containing 3 identically conserved calcium-binding sites. A related protein, GCAP2, is detectable only in the retina and results from a gene duplication event.

REFERENCES

1. Subbaraya, I., Ruiz, C.C., Helekar, B.S., Zhao, X., Gorczyca, W.A., Pettenati, M.J., Rao, P.N., Palczewski, K. and Baehr, W. 1994. Molecular characterization of human and mouse photoreceptor guanylate cyclase-activating protein (GCAP) and chromosomal localization of the human gene. *J. Biol. Chem.* 269: 31080-31089.
2. Gorczyca, W.A., Polans, A.S., Surgucheva, I.G., Subbaraya, I., Baehr, W. and Palczewski, K. 1995. Guanylyl cyclase activating protein. A calcium-sensitive regulator of phototransduction. *J. Biol. Chem.* 270: 22029-22036.
3. Surguchov, A., Bronson, J.D., Banerjee, P., Knowles, J.A., Subbaraya, I., Ruiz, C., Palczewski, K. and Baehr, W. 1997. The human GCAP1 and GCAP2 genes are arranged in a tail-to-tail array on the short arm of chromosome 6 (p21.1). *Genomics* 39: 312-322.
4. Otto-Bruc, A., Fariss, R.N., Haeseleer, F., Huang, J., Buczylo, J., Surgucheva, I., Baehr, W., Milam, A.H. and Palczewski, K. 1997. Localization of guanylate cyclase-activating protein 2 in mammalian retinas. *Proc. Natl. Acad. Sci. USA* 94: 4727-4732.

CHROMOSOMAL LOCATION

Genetic locus: GUCA1A (human) mapping to 6p21.1; Guca1a (mouse) mapping to 17 C.

SOURCE

GCAP1 (FL-201) is a rabbit polyclonal antibody raised against amino acids 1-201 representing full length GCAP1 of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of 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

GCAP1 (FL-201) is recommended for detection of GCAP1 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

GCAP1 (FL-201) is also recommended for detection of GCAP1 in additional species, including bovine.

Suitable for use as control antibody for GCAP1 siRNA (h): sc-40628, GCAP1 siRNA (m): sc-40629, GCAP1 shRNA Plasmid (h): sc-40628-SH, GCAP1 shRNA Plasmid (m): sc-40629-SH, GCAP1 shRNA (h) Lentiviral Particles: sc-40628-V and GCAP1 shRNA (m) Lentiviral Particles: sc-40629-V.

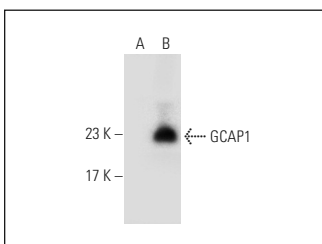
Molecular Weight of GCAP1: 20-23 kDa.

Positive Controls: GCAP1 (h): 293T Lysate: sc-114427.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (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-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

DATA



GCAP1 (FL-201): sc-366052. Western blot analysis of GCAP1 expression in non-transfected: sc-117752 (A) and human GCAP1 transfected: sc-114427 (B) 293T whole cell lysates.

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.