

GCAP2 (m): 293T Lysate: sc-120436

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 cGMP 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. The genes which encode GCAP1 and GCAP2 map to human chromosome 6p21.1.

REFERENCES

1. Subbaraya, I., et al. 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., et al. 1995. Guanylyl cyclase activating protein. A calcium-sensitive regulator of phototransduction. *J. Biol. Chem.* 270: 22029-22036.
3. Surguchov, A., et al. 1997. The human GCAP1 and GCAP2 genes are arranged in a tail-to-tail array on the short arm of chromosome 6p21.1. *Genomics* 39: 312-322.
4. Otto-Bruc, A., et al. 1997. Localization of guanylate cyclase-activating protein 2 in mammalian retinas. *Proc. Natl. Acad. Sci. USA* 94: 4727-4732.
5. Rudnicka-Nawrot, M., et al. 1998. Changes in biological activity and folding of guanylate cyclase-activating protein 1 as a function of calcium. *Biochemistry* 37: 248-257.
6. Sokal, I., et al. 1999. Conformational changes in guanylyl cyclase-activating protein 1 (GCAP1) and its tryptophan mutants as a function of calcium concentration. *J. Biol. Chem.* 274: 19829-19837.

CHROMOSOMAL LOCATION

Genetic locus: Guca1b (mouse) mapping to 17 C.

PRODUCT

GCAP2 (m): 293T Lysate represents a lysate of mouse GCAP2 transfected 293T cells and is provided as 100 µg protein in 200 µl SDS-PAGE buffer.

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.

APPLICATIONS

GCAP2 (m): 293T Lysate is suitable as a Western Blotting positive control for mouse reactive GCAP2 antibodies. Recommended use: 10-20 µl per lane.

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

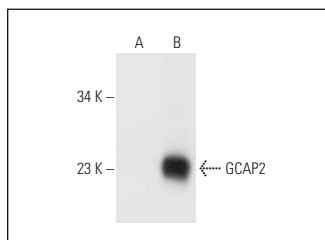
GCAP2 (G-10): sc-166056 is recommended as a positive control antibody for Western Blot analysis of enhanced mouse GCAP2 expression in GCAP2 transfected 293T cells (starting dilution 1:100, dilution range 1:100-1:1,000).

RECOMMENDED SUPPORT REAGENTS

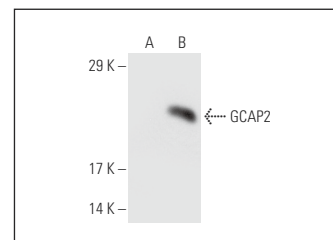
To ensure optimal results, the following support reagents are recommended:

1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ 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



GCAP2 (G-10): sc-166056. Western blot analysis of GCAP2 expression in non-transfected: sc-117752 (A) and mouse GCAP2 transfected: sc-120436 (B) 293T whole cell lysates.



GCAP2 (F6): sc-53990. Western blot analysis of GCAP2 expression in non-transfected: sc-117752 (A) and mouse GCAP2 transfected: sc-120436 (B) 293T whole cell lysates.

PROTOCOLS

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