



C3G (h): 293T Lysate: sc-115806

BACKGROUND

Ras p21 is the prototype of a superfamily of GTPases that is involved in the regulation of a wide variety of cellular processes. Ras signals in its GTP-bound form but is "turned off" when bound to GDP. When unregulated or constitutively turned on by mutations, Ras signaling contributes to malignant transformation. The switch between active and inactive Ras is controlled by GTPase-activating proteins (GAPs) and guanine nucleotide exchange factors (GEFs). C3G was isolated in a screen for proteins that could bind the SH3 domain of the Crk proto-oncogene product. The carboxy-terminus of the C3G protein displays significant sequence similarity to Ras-GRF/Cdc25Mm and mSos and can substitute for Cdc25 function in *S. cerevisiae*. These observations strongly suggest that C3G is a GEF for Ras and is involved in the regulation of Ras signaling through Crk. The C3G gene maps to human chromosome 9q34.13 in proximity to the gene that encodes c-Abl, a proto-oncogene that regulates Crk.

REFERENCES

1. Barbacid, M. 1987. ras genes. Annu. Rev. Biochem. 56: 779-827.
2. Boguski, M.S., et al. 1993. Proteins regulating Ras and its relatives. Nature 366: 643-654.
3. Tanaka, S., et al. 1994. C3G, a guanine nucleotide-releasing protein expressed ubiquitously, binds to the Src homology 3 domains of CRK and GRB2/ASH proteins. Proc. Natl. Acad. Sci. USA 91: 3443-3447.
4. Matsuda, M., et al. 1994. CRK protein binds to two guanine nucleotide-releasing proteins for the Ras family and modulates nerve growth factor-induced activation of Ras in PC12 cells. Mol. Cell. Biol. 14: 5495-5500.
5. Takai, S., et al. 1994. Mapping of the human C3G gene coding a guanine nucleotide releasing protein for Ras family to 9q34.3 by fluorescence *in situ* hybridization. Hum. Genet. 94: 549-550.
6. Ren, R., et al. 1994. Abl protein-tyrosine kinase selects the Crk adapter as a substrate using SH3-binding sites. Genes Dev. 8: 783-795.
7. Feller, S.M., et al. 1994. c-Abl kinase regulates the protein binding activity of c-Crk. EMBO J. 13: 2341-2351.

CHROMOSOMAL LOCATION

Genetic locus: RAPGEF1 (human) mapping to 9q34.13.

PRODUCT

C3G (h): 293T Lysate represents a lysate of human C3G 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.

PROTOCOLS

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

APPLICATIONS

C3G (h): 293T Lysate is suitable as a Western Blotting positive control for human reactive C3G 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.

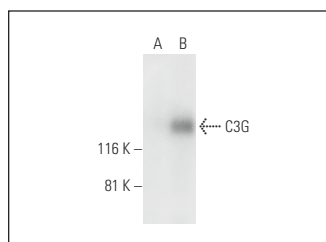
C3G (G-9): sc-393836 is recommended as a positive control antibody for Western Blot analysis of enhanced human C3G expression in C3G transfected 293T cells (starting dilution 1:100, dilution range 1:100-1:1,000).

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



C3G (G-9): sc-393836. Western blot analysis of C3G expression in non-transfected: sc-117752 (A) and human C3G transfected: sc-115806 (B) 293T whole cell lysates.

RESEARCH USE

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