

# p-C3G-R (Tyr 514): sc-32621

## BACKGROUND

C3G (RAPGEF1, Rap guanine nucleotide exchange factor (GEF) 1, GRF2) is a human guanine nucleotide releasing protein for Ras protein. C3G belongs to the adaptor-type Src homology (SH2)-containing molecules. SH2 domains are globular protein modules present in a large variety of functionally distinct proteins. Src family kinases or pervanadate treatment induces phosphorylation of C3G on Tyrosine 504. C3G can interact with Hck and undergo tyrosine phosphorylation by treatment of human myelomonocytic THP-1 cells with mercuric chloride. C3G mRNA is ubiquitous in human adult and fetal tissues. C3G-dependent activation of Rap1 is required for adhesion and spreading of embryonic fibroblasts and for the early embryogenesis of the mouse. The human C3G gene encodes several transcript variants.

## REFERENCES

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3. Zhai, B., et al. 2001. C3G, a guanine nucleotide exchange factor bound to adapter molecule c-Crk, has two alternative splicing forms. *Biochem. Biophys. Res. Commun.* 286: 61-66.
4. Voss, A.K., et al. 2003. The guanine nucleotide exchange factor C3G is necessary for the formation of focal adhesions and vascular maturation. *Development* 130: 355-367.
5. Ling, L., et al. 2003. Src-CrkII-C3G-dependent activation of Rap1 switches growth hormone-stimulated p44/42 MAP kinase and JNK/SAPK activities. *J. Biol. Chem.* 278: 27301-27311.
6. Shivakrupa, R., et al. 2003. Physical and functional interaction between Hck tyrosine kinase and guanine nucleotide exchange factor C3G results in apoptosis, which is independent of C3G catalytic domain. *J. Biol. Chem.* 278: 52188-52194.
7. Guerrero, C., et al. 2004. C3G-mediated suppression of oncogene-induced focus formation in fibroblasts involves inhibition of ERK activation, cyclin A expression and alterations of anchorage-independent growth. *Oncogene* 23: 4885-4893.
8. Hirata, T., et al. 2004. Amplification, up-regulation and over-expression of C3G (CRK SH3 domain-binding guanine nucleotide-releasing factor) in non-small cell lung cancers. *J. Hum. Genet.* 49: 290-295.
9. Shi, S., et al. 2004. Rap1 mutants with increased affinity for the guanine-nucleotide exchange factor C3G. *Oncogene* 23: 8711-8719.

## CHROMOSOMAL LOCATION

Genetic locus: RAPGEF1 (human) mapping to 9q34.3; Rapgef1 (mouse) mapping to 2 B.

## SOURCE

p-C3G-R (Tyr 514) is a rabbit polyclonal antibody raised against a short amino acid sequence containing Tyr 514 phosphorylated C3G of mouse origin.

## 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-32621 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

p-C3G-R (Tyr 514) is recommended for detection of Tyr 514 phosphorylated C3G of mouse 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).

Suitable for use as control antibody for C3G siRNA (m): sc-29864, C3G shRNA Plasmid (m): sc-29864-SH and C3G shRNA (m) Lentiviral Particles: sc-29864-V.

Molecular Weight of p-C3G: 135 kDa.

## 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 B Blocking Reagent: sc-2335 (use 50 mM NaF, sc-24988, as diluent), Western Blotting Luminol Reagent: sc-2048 and Lambda Phosphatase: sc-200312A. 2) 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.

## SELECT PRODUCT CITATIONS

1. Ferrando, I.M., et al. 2012. Identification of targets of c-Src tyrosine kinase by chemical complementation and phosphoproteomics. *Mol. Cell. Proteomics.* 11: 355-369.

## STORAGE

Store at 4° C, \*\*DO NOT FREEZE\*\*. Stable for one year from the date of shipment. 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](http://www.scbt.com) or our catalog for detailed protocols and support products.



Try **p-C3G (G-2): sc-365994**, our highly recommended monoclonal alternative to p-C3G (Tyr 514).