

p-C3G (Tyr 504): sc-12926

BACKGROUND

C3G is a guanine nucleotide exchange factor for Rap1 and is regulated by the expression of Crk adaptor proteins. C3G was originally isolated as one of the two major proteins bound to the SH3 domain of the Crk adaptor protein. Phosphorylation of Crk renders the SH3 domain inaccessible to C3G. C3G is dependent on Crk for phosphorylation and activation. Many kinds of stimulation induce binding of the Crk-C3G complex to a variety of phosphotyrosine-containing proteins, such as receptor tyrosine kinases. Crk activates C3G through phosphorylation on tyrosine 504, which represses the CIS-acting negative regulatory domain outside the catalytic region.

REFERENCES

- Knudsen, B.S., et al. 1994. Four proline-rich sequences of the guanine-nucleotide exchange factor C3G bind with unique specificity to the first Src homology 3 domain of Crk. *J. Biol. Chem.* 269: 32781-32787.
- 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: 3443-7.
- Kiyokawa, E., et al. 1997. Role of Crk oncogene product in physiologic signaling. *Crit. Rev. Oncog.* 8: 329-342.
- Ichiba, T., et al. 1999. Activation of C3G guanine nucleotide exchange factor for Rap 1 by phosphorylation of tyrosine 504. *J. Biol. Chem.* 274: 14376-14381.
- Jin, S., et al. 2000. c-Crk, a substrate of the IGF-1 receptor tyrosine kinase, functions as an early signal mediator in the adipocyte differentiation process. *J. Biol. Chem.* 275: 34344-34352.

CHROMOSOMAL LOCATION

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

SOURCE

p-C3G (Tyr 504) is available as either goat (sc-12926) or rabbit (sc-12926-R) polyclonal affinity purified antibody raised against a short amino acid sequence containing phosphorylated Tyr 504 of C3G 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.

Blocking peptide available for competition studies, sc-12926 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

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.

APPLICATIONS

p-C3G (Tyr 504) is recommended for detection of Tyr 504 phosphorylated C3G of human 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).

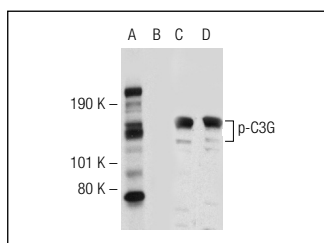
Suitable for use as control antibody for C3G siRNA (h): sc-29863, C3G shRNA Plasmid (h): sc-29863-SH and C3G shRNA (h) Lentiviral Particles: sc-29863-V.

Molecular Weight of p-C3G: 135 kDa.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: for goat primary antibody (sc-12926): 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), for rabbit primary antibody (sc-12926-R): 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) Immunofluorescence: for goat primary antibody (sc-12926): 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, for rabbit primary antibody (sc-12926-R): 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



Western blot analysis of C3G phosphorylation in untreated (A,C) and lambda protein phosphatase (sc-200312A) treated (B,D) K-562 whole cell lysates. Antibodies tested include p-C3G (Tyr 504)-R: sc-12926-R (A,B) and C3G (H-300): sc-15359 (C,D).

SELECT PRODUCT CITATIONS

- 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.
- Radha, V., et al. 2004. Phosphorylated guanine nucleotide exchange factor C3G, induced by pervanadate and Src family kinases localizes to the Golgi and subcortical Actin cytoskeleton. *BMC Cell Biol.* 5: 31.