



p-Op18 (Ser 63): sc-12949

BACKGROUND

Oncoprotein 18 (Op18) is a regulator of microtubule (MT) dynamics. Op18 is a target for both cell cycle and cell surface receptor-coupled kinase systems, and phosphorylation of Op18 on specific combinations of amino acid residues has been shown to switch off MT-destabilizing activity of Op18. Induced expression of the catalytic subunit of cAMP-dependent protein kinase (PKA) results in a dramatic increase in cellular MT polymer content concomitant with phosphorylation and partial degradation of Op18. Phosphorylation of Op18 on two specific sites, Serine 16 and Serine 63, is necessary and sufficient for PKA to switch off Op18 activity in intact cells. PKA phosphorylation down-regulates the MT-destabilizing activity of Op18, which in turn promotes increased Tubulin polymerization. Op18 has the potential to regulate the MT system in response to external signals such as cAMP-linked agonists.

REFERENCES

1. Di Paolo, G., et al. 1997. Phosphorylation regulates the microtubule-destabilizing activity of Stathmin and its interaction with Tubulin. *FEBS Lett.* 416: 149-152.
2. Larsson, N., et al. 1997. Control of microtubule dynamics by Oncoprotein 18: dissection of the regulatory role of multisite phosphorylation during mitosis. *Mol. Cell Biol.* 17: 5530-5539.
3. Gradin, H.M., et al. 1998. Regulation of microtubule dynamics by extracellular signals: cAMP-dependent protein kinase switches off the activity of Oncoprotein 18 in intact cells. *J. Cell Biol.* 140: 131-141.
4. Gavet, O., et al. 1998. The Stathmin phosphoprotein family: intracellular localization and effects on the microtubule network. *J. Cell Sci.* 111: 3333-3346.

CHROMOSOMAL LOCATION

Genetic locus: STMN1 (human) mapping to 1p35; Stmn1 (mouse) mapping to 4 D3.

SOURCE

p-Op18 (Ser 63) is available as either goat (sc-12949) or rabbit (sc-12949-R) polyclonal affinity purified antibody raised against a short amino acid sequence containing phosphorylated Ser 63 of Op18 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-12949 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-Op18 (Ser 63) is recommended for detection of Ser 63 phosphorylated Op18 of mouse, rat and 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 Op18 siRNA (h): sc-36127, Op18 siRNA (m): sc-36128, Op18 shRNA Plasmid (h): sc-36127-SH, Op18 shRNA Plasmid (m): sc-36128-SH, Op18 shRNA (h) Lentiviral Particles: sc-36127-V and Op18 shRNA (m) Lentiviral Particles: sc-36128-V.

Molecular Weight of p-Op18: 19 kDa.

Positive Controls: Jurkat whole cell lysate: sc-2204.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: for goat primary antibody (sc-12949): 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-12949-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 B Blocking Reagent: sc-2335 (use 50 mM NaF, sc-24988, as diluent) and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: for goat primary antibody (sc-12949): 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-12949-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.

SELECT PRODUCT CITATIONS

1. Zada, A.A., et al. 2006. Proteomic analysis of acute promyelocytic leukemia: PML-RAR α leads to decreased phosphorylation of Op18 at Serine 63. *Proteomics* 6: 5705-5719.

PROTOCOLS

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