

p-Op18 (Ser 25): sc-101809

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 downregulates 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

- Di Paolo, G., et al. 1997. Phosphorylation regulates the microtubule-destabilizing activity of stathmin and its interaction with Tubulin. *FEBS Lett.* 416: 149-152.
- 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.
- 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.
- Gavet, O., et al. 1998. The stathmin phosphoprotein family: intracellular localization and effects on the microtubule network. *J. Cell Sci.* 111: 3333-3346.
- le Gouvello, S., et al. 1998. Serine 16 of stathmin as a cytosolic target for Ca²⁺/calmodulin-dependent kinase II after CD2 triggering of human T lymphocytes. *J. Immunol.* 161: 1113-1122.

CHROMOSOMAL LOCATION

Genetic locus: STMN1 (human) mapping to 1p36.11; Stmn1 (mouse) mapping to 4 D3.

SOURCE

p-Op18 (Ser 25) is a rabbit polyclonal antibody raised against a short amino acid sequence containing phosphorylated Ser 25 of Op18 of human origin.

PRODUCT

Each vial contains 100 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

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 25) is recommended for detection of Ser 25 phosphorylated Op18 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1–2 µg per 100–500 µg of total protein (1 ml of cell lysate)], immunofluorescence and immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

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.

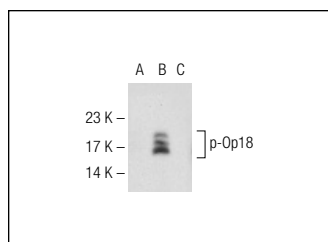
Molecular Weight of p-Op18: 19 kDa.

Positive Controls: Jurkat whole cell lysate: sc-2204 or Jurkat + PMA cell lysate: sc-24718.

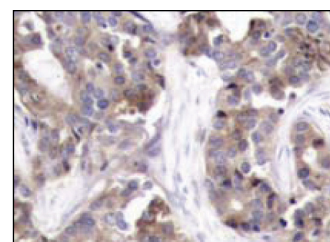
RECOMMENDED SECONDARY REAGENTS

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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) 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. 4) Immunohistochemistry: use ImmunoCruz™: sc-2051 or ABC: sc-2018 rabbit IgG Staining Systems.

DATA



Western blot analysis of Op18 phosphorylation in untreated (A, D), PMA treated (B, E) and PMA and lambda protein phosphatase (sc-200312A) treated (C, F) Jurkat whole cell lysates. Antibodies tested include p-Op18 (Ser 25): sc-101809 (A, B, C) and Op18 (FL-149): sc-20796 (D, E, F).



p-Op18 (Ser 25): sc-101809. Immunoperoxidase staining of formalin-fixed, paraffin-embedded human breast carcinoma tissue showing cytoplasmic staining.

PROTOCOLS

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