SANTA CRUZ BIOTECHNOLOGY, INC.

p-Vimentin (Ser 83): sc-130610

SANTA CRUZ BIOTECHNOLOGY
The Power to Question

BACKGROUND

Phosphorylation of Vimentin on specific amino acid residues, such as Ser 83 and Ser 71, induces disassembly of Vimentin intermediate filaments *in vivo* and *in vitro*. Binding of 14-3-3 depends on Vimentin phosphorylation and requires the phosphopeptide binding domain of 14-3-3, which is an amino-terminal head domain consisting of amino acids 1-96. Phosphorylated Vimentin sequesters 14-3-3 and limits its availability to other target proteins, which can affect intracellular signaling processes that require 14-3-3. The amino-terminal domain of Vimentin is the target site for several protein kinases, including Rho kinase and PKC. The disruption of subcellular compartmentalization of interphase cells leads to PKC-mediated phosphorylation of Vimentin. Thus, targeting of activated PKC, coupled with the reorganization of intracellular membranes which contain phospholipids essential for activation, leads to the mitosis-specific phosphorylation of Vimentin.

REFERENCES

1. Takai, Y., et al. 1996. Mitosis-specific phosphorylation of vimentin by protein kinase C coupled with reorganization of intracellular membranes. J. Cell Biol. 133: 141-149.
2. Goto, H., et al. 1998. Phosphorylation of vimentin by ρ-associated kinase at a uniqe amino-terminal site that is specifically phosphorylated during cytokinesis. J. Biol. Chem. 273: 11728-11736.
3. Nakamura, Y., et al. 2000. Localized phosphorylation of vimentin by ρ-kinase in neuroblastoma N2a cells. Genes Cells 5: 823-837.
4. Tziviion, G., et al. 2000. Calyculin A-induced vitmentin phosphorylation sequesteres 14-3-3 and displaces other 14-3-3 partners *in vivo*. J. Biol. Chem. 275: 29772-29778.
5. Gohara, R., et al. 2001. Phosphorylation of vimentin head domain inhibits interaction with the carboxyl-terminal end of α-helical rod domain studied by surface plasmon resonance measurements. FEBS Lett. 489: 182-186.

CHROMOSOMAL LOCATION

Genetic locus: VIM (human) mapping to 10p13.

SOURCE

p-Vimentin (Ser 83) is a rabbit polyclonal antibody raised against a short amino acid sequence containing Ser 83 phosphorylated Vimentin of human origin.

PRODUCT

Each vial contains 100 µg IgG in 1.0 ml 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-Vimentin (Ser 83) is recommended for detection of Ser 83 phosphorylated Vimentin of 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)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

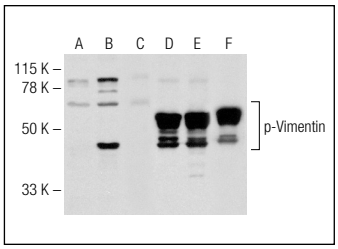
Suitable for use as control antibody for Vimentin siRNA (h): sc-29522, Vimentin shRNA Plasmid (h): sc-29522-SH and Vimentin shRNA (h) Lentiviral Particles: sc-29522-V.

Molecular Weight of p-Vimentin: 57 kDa.

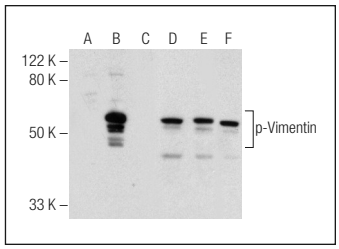
RECOMMENDED SECONDARY REAGENTS

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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).

DATA



Western blot analysis of Vimentin phosphorylation in untreated (**A**,**D**), paclitaxel treated (**B**,**E**) and paclitaxel and lambda protein phosphatase (sc-200312A) treated (**C**,**F**) Jurkat whole cell lysates. Antibodies tested include p-Vimentin (Ser 83): sc-130610 (**A**,**B**,**C**) and Vimentin (V9): sc-6260 (**D**,**E**,**F**).



Western blot analysis of Vimentin phosphorylation in untreated (**A**,**D**), induction cocktail (sc-362324) treated (**B**,**E**) and induction cocktail (sc-362324) and lambda protein phosphatase (sc-200312A) treated (**C**,**F**) HeLa whole cell lysates. Antibodies tested include p-Vimentin (Ser 83): sc-130610 (**A**,**B**,**C**) and Vimentin (C-20)-R: sc-7557-R (**D**,**E**,**F**).

SELECT PRODUCT CITATIONS

1. Daily, A., et al. 2010. Abrogation of microcystin cytotoxicity by MAP kinase inhibitors and N-acetyl cysteine is confounded by OATPIB1 uptake activity inhibition. Toxicon 55: 827-837.
2. Bhatia, B., et al. 2011. Differences between the neurogenic and proliferative abilities of Müller glia with stem cell characteristics and the ciliary epithelium from the adult human eye. Exp. Eye Res. 93: 852-861.

PROTOCOLS

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