

p-Vimentin (Ser 71): sc-12973

BACKGROUND

Phosphorylation of Vimentin 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. Ser 38 and Ser 71 of Vimentin are the major sites of phosphorylation by Rho kinase. The disruption of sub-cellular 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 Rho-associated kinase at a unique 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 Rho-kinase in neuroblastoma N2a cells. *Genes Cells* 5: 823-837.
4. Tziviion, G., et al. 2000. Calyculin A-induced Vimentin phosphorylation sequesters 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 alpha-helical rod domain studied by surface plasmon resonance measurements. *FEBS Lett.* 489: 182-186.

CHROMOSOMAL LOCATION

Genetic locus: VIM (human) mapping to 10p13; Vim (mouse) mapping to 2 A1.

SOURCE

p-Vimentin (Ser 71) is available as either goat (sc-12973) or rabbit (sc-12973-R) polyclonal affinity purified antibody raised against a short amino acid sequence containing Ser 71 phosphorylated Vimentin 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-12973 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.

APPLICATIONS

p-Vimentin (Ser 71) is recommended for detection of Ser 71 phosphorylated Vimentin of mouse, rat, human and *Xenopus laevis* 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 Vimentin siRNA (h): sc-29522, Vimentin siRNA (m): sc-29523, Vimentin shRNA Plasmid (h): sc-29522-SH, Vimentin shRNA Plasmid (m): sc-29523-SH, Vimentin shRNA (h) Lentiviral Particles: sc-29522-V and Vimentin shRNA (m) Lentiviral Particles: sc-29523-V.

Molecular Weight of p-Vimentin: 57 kDa.

Positive Controls: HeLa + Calyculin A cell lysate: sc-2271.

SELECT PRODUCT CITATIONS

1. Meng, X., et al. 2006. Effects of overexpression of Sim2 on spatial memory and expression of synapsin I in rat hippocampus. *Cell Biol. Int.* 30: 841-847.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

PROTOCOLS

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