

# POPX1 (H-45): sc-135276

## BACKGROUND

The phosphorylation and dephosphorylation of proteins on serine and threonine residues is an essential means of regulating a broad range of cellular functions in eukaryotes, including division, homeostasis and apoptosis. A group of proteins that are intimately involved in this process are the serine/threonine protein phosphatases. POPX1 [also known as partner of PIX 1, PPM1E (protein phosphatase 1E) or PP2CH] and POPX2 [also known as partner of PIX 2, PPM1F, CaMKPase (CaM-kinase phosphatase) or FEM-2] belong to the PP2C family of serine/threonine phosphatases. Members of the PP2C family are negative regulators of cell stress response pathways. POPX2 is a ubiquitously expressed protein and POPX1 is predominantly expressed in brain and testis. POPX1 and POPX2 specifically interact with PIX (PAK interacting exchange factor) proteins and negatively regulate the activity of  $\alpha$ PAK, a protein kinase that can lead to the breakdown of Actin stress fibers and other morphological changes. POPX2 can also interact with and regulate CaMKII activity. Overexpression of POPX2 can result in caspase-dependent apoptosis.

## REFERENCES

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- Tan, K.M., Chan, S.L., Tan, K.O. and Yu, V.C. 2001. The *Caenorhabditis elegans* sex-determining protein FEM-2 and its human homologue, hFEM-2, are  $Ca^{2+}$ /calmodulin-dependent protein kinase phosphatases that promote apoptosis. *J. Biol. Chem.* 276: 44193-44202.
- Koh, C.G., Tan, E.J., Manser, E. and Lim, L. 2002. The p21-activated kinase PAK is negatively regulated by POPX1 and POPX2, a pair of serine/threonine phosphatases of the PP2C family. *Curr. Biol.* 12: 317-321.

## CHROMOSOMAL LOCATION

Genetic locus: PPM1E (human) mapping to 17q22; Ppm1e (mouse) mapping to 11 C.

## SOURCE

POPX1 (H-45) is a rabbit polyclonal antibody raised against amino acids 298-342 mapping within an internal region of POPX1 of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## APPLICATIONS

POPX1 (H-45) is recommended for detection of POPX1 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)], 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).

POPX1 (H-45) is also recommended for detection of POPX1 in additional species, including canine, bovine, porcine and avian.

Suitable for use as control antibody for POPX1 siRNA (h): sc-62842, POPX1 siRNA (m): sc-62843, POPX1 shRNA Plasmid (h): sc-62842-SH, POPX1 shRNA Plasmid (m): sc-62843-SH, POPX1 shRNA (h) Lentiviral Particles: sc-62842-V and POPX1 shRNA (m) Lentiviral Particles: sc-62843-V.

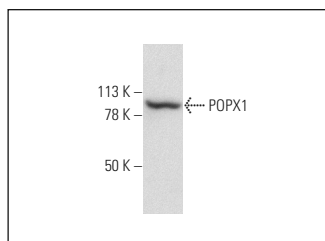
Molecular Weight of POPX1: 84 kDa.

Positive Controls: T98G cell lysate: sc-2294.

## 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 A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 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.

## DATA



POPX1 (H-45): sc-135276. Western blot analysis of POPX1 expression in T98G whole cell lysate.

## 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.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.