

POPX2 (h2): 293T Lysate: sc-177761

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 designated partner of PIX 1, PPM1E (protein phosphatase 1E) or PP2CH, and POPX2, also designated partner of PIX 2, PPM1F (protein phosphatase 1F), 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 α 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

1. Nomura, N., et al. 1994. Prediction of the coding sequences of unidentified human genes. I. The coding sequences of 40 new genes (KIAA0001-KIAA0040) deduced by analysis of randomly sampled cDNA clones from human immature myeloid cell line KG-1. *DNA Res.* 1: 27-35.
2. Kikuno, R., et al. 1999. Prediction of the coding sequences of unidentified human genes. XIV. The complete sequences of 100 new cDNA clones from brain which code for large proteins *in vitro*. *DNA Res.* 6: 197-205.
3. Tan, K.M., et al. 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.
4. Koh, C.G., et al. 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.
5. Harvey, B.P., et al. 2004. Regulation of the multifunctional Ca^{2+} /calmodulin-dependent protein kinase II by the PP2C phosphatase PPM1F in fibroblasts. *J. Biol. Chem.* 279: 24889-24898.
6. Ishida, A., et al. 2005. Identification of major Ca^{2+} /calmodulin-dependent protein kinase phosphatase-binding proteins in brain: biochemical analysis of the interaction. *Arch. Biochem. Biophys.* 435: 134-146.

CHROMOSOMAL LOCATION

Genetic locus: PPM1F (human) mapping to 22q11.22.

PRODUCT

POPX2 (h2): 293T Lysate represents a lysate of human POPX2 transfected 293T cells and is provided as 100 μg protein in 200 μl SDS-PAGE buffer.

STORAGE

Store at -20°C . Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. Non-hazardous. No MSDS required.

APPLICATIONS

POPX2 (h2): 293T Lysate is suitable as a Western Blotting positive control for human reactive POPX2 antibodies. Recommended use: 10-20 μl per lane.

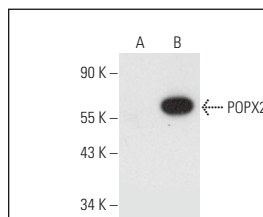
Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

POPX2 (B-7): sc-514794 is recommended as a positive control antibody for Western Blot analysis of enhanced human POPX2 expression in POPX2 transfected 293T cells (starting dilution 1:100, dilution range 1:100-1:1,000).

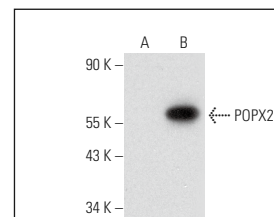
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended:
1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048.

DATA



POPX2 (B-7): sc-514794. Western blot analysis of POPX2 expression in non-transfected: sc-117752 (A) and human POPX2 transfected: sc-177761 (B) 293T whole cell lysates.



POPX2 (E-2): sc-514894. Western blot analysis of POPX2 expression in non-transfected: sc-117752 (A) and human POPX2 transfected: sc-177761 (B) 293T whole cell lysates.

RESEARCH USE

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

PROTOCOLS

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