

# PICH (G-14): sc-138047

## BACKGROUND

PICH (Plk1-interacting checkpoint helicase), also known as DNA excision repair protein ERCC-6-like (ERCC6L) or tumor antigen BJ-HCC-15, is a 1,250 amino acid protein belonging to the SNF2/RAD54 helicase family. PICH is a DNA helicase and an essential component of the spindle assembly checkpoint. During mitosis, PICH recruits MAD2 to kinetochores and also regulates the tension on centromeric chromatin. PICH is concentrated in between the kinetochores in prometaphase cells, while in metaphase it localizes to the thin threads composed of catenated centromeric DNA that stretch between sister kinetochores. PICH is phosphorylated by Plk, which prevents PICH from associating with chromosome arms and restricts the localization of PICH to the kinetochore-centromere region. PICH/Plk interaction is also required for correct Plk localization to the kinetochore. PICH contains one helicase ATP-binding domain, two TPR repeats and one helicase C-terminal domain.

## REFERENCES

1. Golsteyn, R.M., Schultz, S.J., Bartek, J., Ziemiecki, A., Ried, T. and Nigg, E.A. 1994. Cell cycle analysis and chromosomal localization of human Plk1, a putative homologue of the mitotic kinases *Drosophila* polo and *Saccharomyces cerevisiae* CDC5. *J. Cell Sci.* 107: 1509-1517.
2. Beausoleil, S.A., Jedrychowski, M., Schwartz, D., Elias, J.E., Villen, J., Li, J., Cohn, M.A., Cantley, L.C. and Gygi, S.P. 2004. Large-scale characterization of HeLa cell nuclear phosphoproteins. *Proc. Natl. Acad. Sci. USA* 101: 12130-12135.
3. Xu, Y., Chen, X. and Li, Y. 2005. Ercc6l, a gene of SNF2 family, may play a role in the teratogenic action of alcohol. *Toxicol. Lett.* 157: 233-239.
4. Baumann, C., Körner, R., Hofmann, K. and Nigg, E.A. 2007. PICH, a centromere-associated SNF2 family ATPase, is regulated by Plk1 and required for the spindle checkpoint. *Cell* 128: 101-114.
5. Spence, J.M., Phua, H.H., Mills, W., Carpenter, A.J., Porter, A.C. and Farr, C.J. 2007. Depletion of topoisomerase II $\alpha$  leads to shortening of the metaphase interkinetochore distance and abnormal persistence of PICH-coated anaphase threads. *J. Cell Sci.* 120: 3952-3964.
6. Leng, M., Bessuso, D., Jung, S.Y., Wang, Y. and Qin, J. 2008. Targeting Plk1 to chromosome arms and regulating chromosome compaction by the PICH ATPase. *Cell Cycle* 7: 1480-1489.
7. Svendsen, J.M., Smogorzewska, A., Sowa, M.E., O'Connell, B.C., Gygi, S.P., Elledge, S.J. and Harper, J.W. 2009. Mammalian BTBD12/SLX4 assembles a Holliday junction resolvase and is required for DNA repair. *Cell* 138: 63-77.

## CHROMOSOMAL LOCATION

Genetic locus: ERCC6L (human) mapping to Xq13.1; Ercc6l (mouse) mapping to X D.

## SOURCE

PICH (G-14) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of PICH 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.

Blocking peptide available for competition studies, sc-138047 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

PICH (G-14) is recommended for detection of PICH of human origin and Ercc6l of mouse 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).

PICH (G-14) is also recommended for detection of PICH in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for PICH siRNA (h): sc-90897, Ercc6l siRNA (m): sc-144921, PICH shRNA Plasmid (h): sc-90897-SH, Ercc6l shRNA Plasmid (m): sc-144921-SH, PICH shRNA (h) Lentiviral Particles: sc-90897-V and Ercc6l shRNA (m) Lentiviral Particles: sc-144921-V.

Molecular Weight of PICH: 141 kDa.

## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (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) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

## 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.