

# PIF1 (F-10): sc-48377

## BACKGROUND

PIF1 is a single-stranded (ss) DNA-dependent ATPase as well as a DNA helicase that unwinds DNA in a 5' to 3' direction with respect to the DNA strand on which it binds first. This protein is critical to DNA replication and telomere length maintenance in *Saccharomyces cerevisiae*. PIF1 gene is highly conserved from yeast to humans. Mutations in the gene that encodes for PIF1 cause all telomeres to lengthen, suggesting that the PIF1 functions as a catalytic inhibitor of both new telomere formation and telomere elongation. Human PIF1 preferentially binds telomeric DNA where it inhibits telomerase activity. PIF1 specifically counteracts the RecQ homolog Sgs1 helicase activity, and degradation of PIF1 is mediated by the ubiquitin-26S proteasome pathway.

## CHROMOSOMAL LOCATION

Genetic locus: PIF1 (human) mapping to 15q22.31; Pif1 (mouse) mapping to 9 C.

## SOURCE

PIF1 (F-10) is a mouse monoclonal antibody raised against full length PIF1 of mouse origin.

## PRODUCT

Each vial contains 200 µg IgG<sub>1</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin. Also available as TransCruz reagent for Gel Supershift and ChIP applications, sc-48377 X, 200 µg/0.1 ml.

PIF1 (F-10) is available conjugated to agarose (sc-48377 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-48377 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-48377 PE), fluorescein (sc-48377 FITC), Alexa Fluor<sup>®</sup> 488 (sc-48377 AF488), Alexa Fluor<sup>®</sup> 546 (sc-48377 AF546), Alexa Fluor<sup>®</sup> 594 (sc-48377 AF594) or Alexa Fluor<sup>®</sup> 647 (sc-48377 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor<sup>®</sup> 680 (sc-48377 AF680) or Alexa Fluor<sup>®</sup> 790 (sc-48377 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

## APPLICATIONS

PIF1 (F-10) is recommended for detection of PIF1 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range ), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (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 PIF1 siRNA (h): sc-76134, PIF1 siRNA (m): sc-76135, PIF1 shRNA Plasmid (h): sc-76134-SH, PIF1 shRNA Plasmid (m): sc-76135-SH, PIF1 shRNA (h) Lentiviral Particles: sc-76134-V and PIF1 shRNA (m) Lentiviral Particles: sc-76135-V.

PIF1 (F-10) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

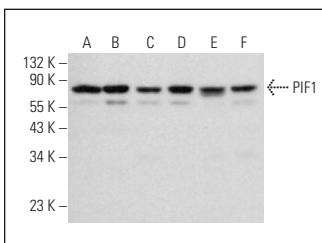
Molecular Weight of PIF1: 81 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200.

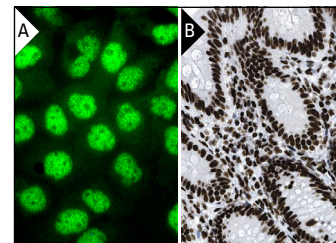
## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker<sup>™</sup> Molecular Weight Standards: sc-2035, UltraCruz<sup>®</sup> Blocking Reagent: sc-516214 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 m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz<sup>®</sup> Mounting Medium: sc-24941 or UltraCruz<sup>®</sup> Hard-set Mounting Medium: sc-359850. 4) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

## DATA



PIF1 (F-10): sc-48377. Western blot analysis of PIF1 expression in HeLa (A), Jurkat (B), COLO 205 (C), F9 (D), WEHI-231 (E) and PC-12 (F) whole cell lysates.



PIF1 (F-10): sc-48377. Immunofluorescence staining of formalin-fixed A-431 cells showing nuclear localization (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human appendix tissue showing nuclear staining of glandular and lymphoid cells. Kindly provided by The Swedish Human Protein Atlas (HPA) program (B).

## SELECT PRODUCT CITATIONS

- Henry, R.A., et al. 2010. Components of the secondary pathway stimulate the primary pathway of eukaryotic Okazaki fragment processing. *J. Biol. Chem.* 285: 28496-28505.
- Jimeno, S., et al. 2018. The helicase PIF1 facilitates resection over sequences prone to forming G<sub>4</sub> structures. *Cell Rep.* 24: 3262-3273.

## 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) for detailed protocols and support products.

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