

#3550 Store at -20°C

PIAS1 (D33A7) XP® Rabbit mAb



Cell Signaling
TECHNOLOGY®

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For Research Use Only. Not for Use in Diagnostic Procedures.

Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
WB, IF-IC, FC-FP	H M R Mk	Endogenous	76	Rabbit IgG	#O75925	8554

Product Usage Information

Application

Western Blotting
Immunofluorescence (Immunocytochemistry)
Flow Cytometry (Fixed/Permeabilized)

Dilution

1:1000
1:50 - 1:200
1:50 - 1:200

Storage

Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA, 50% glycerol and less than 0.02% sodium azide. Store at -20°C. Do not aliquot the antibody.

Specificity / Sensitivity

PIAS1 (D33A7) XP® Rabbit mAb detects endogenous levels of total PIAS1 protein.

Source / Purification

Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Ser550 of human PIAS1.

Background

The protein inhibitor of activated Stat (PIAS) proteins, which include PIAS1, PIAS3, PIASx, and PIASy, were originally characterized based on their interaction with the Stat family of transcription factors (1,2). PIAS1, PIAS3, and PIASx interact with and repress Stat1, Stat3, and Stat4, respectively (1-3). Deletion of PIAS1 leads to inhibition of interferon-inducible genes and increased protection against infection (4). The PIAS family contains a conserved RING domain that has been linked to a function as a small ubiquitin-related modifier (SUMO) ligase, coupling the SUMO conjugating enzyme Ubc9 with its substrate proteins (5,6). Numerous studies have now shown that PIAS family members can regulate the activity of transcription factors through distinct mechanisms, including NF-κB (7,8), c-Jun, p53 (5,9), Oct-4 (10), and Smads (11,12). The activity of PIAS1 is regulated by both phosphorylation and arginine methylation. Inflammatory stimuli can induce IKK-mediated phosphorylation of PIAS1 at Ser90, which is required for its activity (13). In addition, PRMT1 induces arginine methylation of PIAS1 at Arg303 following interferon treatment and is associated with its repressive activity on Stat1 (14).

Background References

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3. Arora, T. et al. (2003) *J Biol Chem* 278, 21327-30.
4. Liu, B. et al. (2004) *Nat Immunol* 5, 891-8.
5. Schmidt, D. and Müller, S. (2002) *Proc Natl Acad Sci USA* 99, 2872-7.
6. Kotaja, N. et al. (2002) *Mol Cell Biol* 22, 5222-34.
7. Liu, B. et al. (2005) *Mol Cell Biol* 25, 1113-23.
8. Tahk, S. et al. (2007) *Proc Natl Acad Sci USA* 104, 11643-8.
9. Bischof, O. et al. (2006) *Mol Cell* 22, 783-94.
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11. Long, J. et al. (2004) *Proc Natl Acad Sci USA* 101, 99-104.
12. Murdoch, R.N. and Edwards, T. (1992) *Biochem Int* 28, 1029-37.
13. Liu, B. et al. (2007) *Cell* 129, 903-14.
14. Weber, S. et al. (2009) *Genes Dev* 23, 118-32.

Species Reactivity

Species reactivity is determined by testing in at least one approved application (e.g., western blot).

Western Blot Buffer

IMPORTANT: For western blots, incubate membrane with diluted primary antibody in 5% w/v BSA, 1X TBS, 0.1% Tween® 20 at 4°C with gentle shaking, overnight.

Applications Key

WB: Western Blotting **IF-IC:** Immunofluorescence (Immunocytochemistry)
FC-FP: Flow Cytometry (Fixed/Permeabilized)

Cross-Reactivity Key

H: human **M:** mouse **R:** rat **Hm:** hamster **Mk:** monkey **Vir:** virus **Mi:** mink **C:** chicken **Dm:** D. melanogaster
X: Xenopus **Z:** zebrafish **B:** bovine **Dg:** dog **Pg:** pig **Sc:** S. cerevisiae **Ce:** C. elegans **Hr:** horse
GP: Guinea Pig **Rab:** rabbit **All:** all species expected

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