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PIAS3 Antibody (N-term)

Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP1245a

Product Information

Application	IHC-P, WB, E
Primary Accession	Q9Y6X2
Other Accession	O70260, O54714
Reactivity	Human
Predicted	Mouse, Rat
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Calculated MW	68017
Antigen Region	95-126

Additional Information

Gene ID	10401
Other Names	E3 SUMO-protein ligase PIAS3, 632-, Protein inhibitor of activated STAT protein 3, PIAS3
Target/Specificity	This PIAS3 antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 95-126 amino acids from the N-terminal region of human PIAS3.
Dilution	IHC-P~~1:100~500 WB~~1:1000 E~~Use at an assay dependent concentration.
Format	Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is prepared by Saturated Ammonium Sulfate (SAS) precipitation followed by dialysis against PBS.
Storage	Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.
Precautions	PIAS3 Antibody (N-term) is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	PIAS3
Function	Functions as an E3-type small ubiquitin-like modifier (SUMO) ligase, stabilizing the interaction between UBE2I and the substrate, and as a SUMO-tethering factor. Plays a crucial role as a transcriptional coregulation in

	various cellular pathways, including the STAT pathway and the steroid hormone signaling pathway. Involved in regulating STAT3 signaling via inhibiting STAT3 DNA-binding and suppressing cell growth. Enhances the sumoylation of MTA1 and may participate in its paralog-selective sumoylation (PubMed:21965678, PubMed:9388184). Sumoylates CCAR2 which promotes its interaction with SIRT1 (PubMed:25406032). Diminishes the sumoylation of ZFHX3 by preventing the colocalization of ZFHX3 with SUMO1 in the nucleus (PubMed:24651376).
Cellular Location	Cytoplasm {ECO:0000250|UniProtKB:O54714}. Nucleus {ECO:0000250|UniProtKB:O54714}. Nucleus speckle {ECO:0000250|UniProtKB:O54714}. Note=Colocalizes with MITF in the nucleus. Colocalizes with GFI1 in nuclear dots. Colocalizes with SUMO1 in nuclear granules. {ECO:0000250|UniProtKB:O54714}
Tissue Location	Widely expressed..

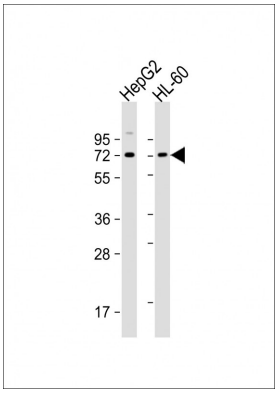
Background

PIAS3 is a member of the PIAS [protein inhibitor of activated STAT (signal transducer and activator of transcription)] family of transcriptional modulators. The protein functions as a SUMO (small ubiquitin-like modifier)-E3 ligase stabilizing the interaction between UBE2I and the substrate, and as a SUMO-tethering factor, catalyzing the covalent attachment of a SUMO protein to specific target substrates. PIAS3 plays a crucial role as a transcriptional coregulator in various cellular pathways, including the STAT pathway and the steroid hormone signaling pathway. The effects of this transcriptional coregulation, transactivation or silencing, may vary depending upon the biological context.

References

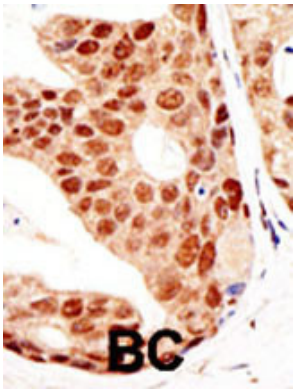
Nojiri, S., et al., Biochem. Biophys. Res. Commun. 314(1):97-103 (2004). Long, J., et al., Proc. Natl. Acad. Sci. U.S.A. 101(1):99-104 (2004). Cheng, J., et al., Leuk. Res. 28(1):71-82 (2004). Yamamoto, T., et al., Biochem. Biophys. Res. Commun. 306(2):610-615 (2003). Ueki, N., et al., J. Hum. Genet. 44(3):193-196 (1999).

Images



All lanes : Anti-PIAS3 Antibody (N-term) at 1:1000 dilution Lane 1: HepG2 whole cell lysate Lane 2: HL-60 whole cell lysate Lysates/proteins at 20 µg per lane. Secondary Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated at 1/10000 dilution. Predicted band size : 68kDa Blocking/Dilution buffer: 5% NFDM/TBST.

Formalin-fixed and paraffin-embedded human cancer tissue reacted with the primary antibody, which was peroxidase-conjugated to the secondary antibody, followed by DAB staining. This data demonstrates the use of this antibody for immunohistochemistry; clinical relevance has not been evaluated. BC = breast carcinoma; HC = hepatocarcinoma.



Citations

- Developmental profiles of SUMOylation pathway proteins in rat cerebrum and cerebellum.
- The SUMO-E3 ligase PIAS3 targets pyruvate kinase M2.
- Loss of protein inhibitors of activated STAT-3 expression in glioblastoma multiforme tumors: implications for STAT-3 activation and gene expression.
- PIAS3 interacts with ATF1 and regulates the human ferritin H gene through an antioxidant-responsive element.