10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.875.1999

PIASy Antibody (N-term)

Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP1249a

Product Information

Application	WB, IHC-P, E
Primary Accession	Q8N2W9
Reactivity	Human, Rat, Mouse
Predicted	Bovine, Canine, Chicken
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Calculated MW	56504
Antigen Region	48-79

Additional Information

Gene ID	51588
Other Names	E3 SUMO-protein ligase PIAS4, 632-, PIASy, Protein inhibitor of activated STAT protein 4, Protein inhibitor of activated STAT protein gamma, PIAS-gamma, PIAS4, PIASG
Target/Specificity	This PIASy antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 48-79 amino acids from the N-terminal region of human PIASy.
Dilution	WB~~1:1000 IHC-P~~1:100~500 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	PIASy Antibody (N-term) is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	PIAS4 {ECO:0000303|PubMed:32832608, ECO:0000312|HGNC:HGNC:17002}
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 (PubMed:12511558, PubMed:12631292,

PubMed:12727872, PubMed:15831457, PubMed:15976810, PubMed:22508508, PubMed:32832608). Mediates sumoylation of ALKBH5, AXIN1, CEBPA, KLF8, GATA2, PARK7, HERC2, MYB, TCF4 and RNF168 (PubMed:12223491, PubMed:12511558, PubMed:12631292, PubMed:12727872, PubMed:12750312, PubMed:15831457, PubMed:15976810, PubMed:16617055, PubMed:22508508, PubMed:34048572). Plays a crucial role as a transcriptional coregulation in various cellular pathways, including the STAT pathway, the p53/TP53 pathway, the Wnt pathway and the steroid hormone signaling pathway (PubMed:11388671). Involved in gene silencing (PubMed:11248056). In Wnt signaling, represses LEF1 and enhances TCF4 transcriptional activities through promoting their sumoylations (PubMed:12727872, PubMed:15831457). Enhances the sumoylation of MTA1 and may participate in its paralog-selective sumoylation (PubMed:21965678). Binds to AT-rich DNA sequences, known as matrix or scaffold attachment regions (MARs/SARs) (By similarity). Catalyzes conjugation of SUMO2 to KAT5 in response to DNA damage, facilitating repair of DNA double-strand breaks (DSBs) via homologous recombination (HR) (PubMed:32832608). Mediates sumoylation of PARP1 in response to PARP1 trapping to chromatin (PubMed:35013556). Mediates sumoylation of KLF8, repressing KLF8 transcriptional activity and cell cycle progression into G(1) phase (PubMed:16617055). Sumoylates ALKBH5 downstream of MAPK8/JNK1 and MAPK9/JNK2 in response to reactive oxygen species (ROS), inhibiting ALKBH5 RNA demethylase activity (PubMed:34048572).

Cellular Location

Nucleus, PML body Note=Colocalizes with SUMO1 and TCF7L2/TCF4 and LEF1 in a subset of PML (promyelocytic leukemia) nuclear bodies.

Tissue Location

Highly expressed in testis and, at lower levels, in spleen, prostate, ovary, colon and peripheral blood leukocytes

Background

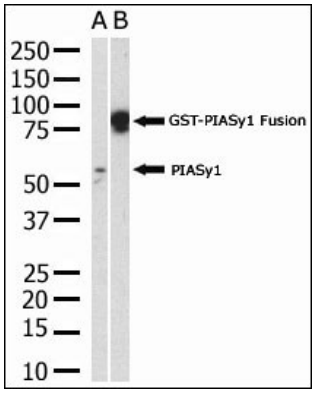
PIASy1 functions as an E3-type small ubiquitin-like modifier (SUMO) ligase, stabilizing the interaction between UBE2I and the substrate, and as a SUMO-tethering factor. This protein plays a crucial role in transcriptional coregulation of various cellular pathways, including the STAT pathway, the p53 pathway, the wnt pathway and the steroid hormone signaling pathway. PIASy1 is involved in gene silencing, and promotes PARK7 sumoylation.

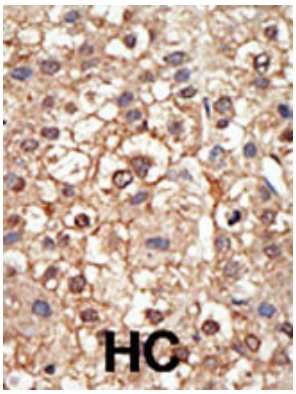
References

Imoto, S., et al., J. Biol. Chem. 278(36):34253-34258 (2003).
Chun, T.H., et al., Circ. Res. 92(11):1201-1208 (2003).
Subramanian, L., et al., J. Biol. Chem. 278(11):9134-9141 (2003).
Liu, B., et al., Proc. Natl. Acad. Sci. U.S.A. 98(6):3203-3207 (2001).
Liu, B., et al., Proc. Natl. Acad. Sci. U.S.A. 95(18):10626-10631 (1998).

Images

The anti-PIASy polyclonal antibody (Cat. #AP1249a) is used in Western blot to detect PIASy in HL-60 cell lysate.





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

- Activation of the SUMO modification system is required for the accumulation of RAD51 at sites of DNA damage.
- The interaction of Piasy with Trim32, an E3-ubiquitin ligase mutated in limb-girdle muscular dystrophy type 2H, promotes Piasy degradation and regulates UVB-induced keratinocyte apoptosis through NFkappaB.

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.