Saint Louis, Missouri 63103 USA
Telephone (800) 325-5832 (314) 771-5765
Fax (314) 286-7828
email: techserv@sial.com
sigma-aldrich.com

ProductInformation

Monoclonal Anti-PIAS-x
Clone PIASX-116
Purified Mouse Immunoglobulin

Product Number **P 9498**

Product Description

Monoclonal Anti-PIAS-x (mouse IgG1isotype) is derived from the PIASX-116 hybridoma produced by the fusion of mouse myeloma cells (NS1 cells) and splenocytes from BALB/c mice immunized with a peptide corresponding to amino acids 26-40 of human PIAS-x. The isotype is determined using a double diffusion immunoassay using Mouse Monoclonal Antibody Isotyping Reagents (Sigma ISO-2).

Monoclonal Anti-PIAS-x recognizes human PIAS-x in various immunochemical techniques including ELISA, immunocytochemistry, and immunoblotting (~75 kDa). The antibody epitope resides within amino acids 26-40 of human PIAS-x.

Cytokines activate the Janus family of tyrosine kinases (JAK) by binding to their corresponding receptors. Activated JAK kinases phosphorylate a family of at least seven cytoplasmic transcription factors termed STATs (signal transducer and activator of transcription) that mediate specific transcriptional responses. STAT proteins are down regulated by proteins of the PIAS family (Protein Inhibitor of Activated STAT). In vertebrates, four PIAS proteins are known: PIAS-1, -3, -x, and -y. PIAS-1 is a specific inhibitor of activated STAT1 but is also known to enhance the transcriptional activity of nuclear hormone receptors.[1-3] PIAS-1 and PIAS-3 inhibit the binding of STAT1 and STAT3 to DNA, while PIAS-y represses the activity of STAT1 and the androgen receptor without affecting DNA binding. PIAS-x was found upon a search for PIAS-1 homologues in an EST database. PIAS-x transcript is alternatively spliced to yield two protein isoforms, PIAS-x-α and PIAS-x-β, that differ in their C-terminal region. PIAS-x contains a zinc-binding motif and a highly acidic region. PIAS-x is a transcriptional co-repressor of STAT4. Its inhibition is disrupted by an inhibitor of histone deacetylase. This indicates that PIAS-x may be involved in the regulation of chromatin structure.[1-3] It has been found that PIAS-x and PIAS-1 also function as E3-type ligases that promote the SUMO modification of a number of transcription regulators.[4]

Reagent

The antibody is supplied as a solution in 0.01 M phosphate buffered saline, pH 7.4, containing 15 mM sodium azide.

Antibody Concentration: ~2 mg/mL

Precautions and Disclaimer

Due to the sodium azide content, a material safety data sheet (MSDS) for this product has been sent to the attention of the safety officer of your institution. Consult the MSDS for information regarding hazardous and safe handling practices.

Storage/Stability

For continuous use, store at 2-8 °C for up to one month. For extended storage, freeze in working aliquots. Repeated freezing and thawing is not recommended. Storage in “frost-free” freezers is also not recommended. If slight turbidity occurs upon prolonged storage, clarify the solution by centrifugation before use. Working dilution samples should be discarded if not used within 12 hours.

Product Profile

By immunoblotting, a working antibody concentration of 1-2 µg/mL is recommended using the Proteasome Fraction II of HeLa cells (Product Code F3926).

Note: In order to obtain the best results using various techniques and preparations, we recommend determining optimal working dilutions by titration.

References

1. Jackson, P.K., Genes & Develop., **15**, 3053-3058 (2001).
2. Wormald, S., and Hilton, D.J., J. Biol. Chem., **279**, 821-824 (2004).
3. Liu, B., et al., Proc. Nat. Acad. Sci. USA, **95**, 10626-10631 (1998).
4. Rogers, R.S., et al., J. Biol. Chem., **278**, 30091-30097 (2003).

KAA/EK 09/05