

PIAS 3 (h4): 293T Lysate: sc-173283

BACKGROUND

The IL-6-type family of cytokines, which includes IL-6 as well as a number of similar cytokines and growth factors, plays a significant role in regulating gene activation, proliferation and differentiation. Transcription factors of the Stat family are known to be involved in this signal transduction pathway, undergoing phosphorylation, dimerization and translocation to the nucleus upon activation. PIAS 1, for protein inhibitor of activated Stat1 (also designated Gu/RNA helicase II binding protein), binds specifically to Stat1, blocking Stat1 DNA-binding activity and inhibiting Stat1-mediated gene activation. PIAS 1 also binds to the Gu/RNA helicase II enzyme, leading to the proteolytic cleavage of Gu/RH-II. PIAS 3 similarly binds specifically to Stat3, blocking Stat3 DNA-binding activity and inhibiting Stat3-mediated gene activation.

REFERENCES

1. Akira, S., Nishio, Y., Inoue, M., Wang, X.J., Wei, S., Matusaka, T., Yoshida, K., Sudo, T., Naruto, M. and Kishimoto, T. 1994. Molecular cloning of APRF, a novel IFN-stimulated gene factor 3 p91-related transcription factor involved in the gp130-mediated signaling pathway. *Cell* 77: 63-71.
2. Zhong, Z., Wen, Z. and Darnell, J.E., Jr. 1994. Stat3: a Stat family member activated by tyrosine phosphorylation in response to epidermal growth factor and interleukin-6. *Science* 264: 95-98.
3. Valdez, B.C., Henning, D., Perlaky, L., Bush, R.K. and Busch, H. 1997. Cloning and characterization of Gu/RH-II binding protein. *Biochem. Biophys. Res. Commun.* 234: 335-340.
4. Chung, C.D., Laio, J., Liu, B., Rao, X., Jay, P., Berta, P., Schuai, K. 1997. Specific inhibition of Stat3 signal transduction by PIAS 3. *Science* 278: 1803-1805.
5. Heinrich, P.C., Behrmann, I., Muller-Newen, G., Schaper, F. and Graeve, L. 1998. Interleukin-6-type cytokine signalling through the gp130/JAK/Stat pathway. *Biochem. J.* 334: 297-314.
6. Liu, B., Liao, J., Rao, X., Kushner, S.A., Chung, C.D., Chang, D.D. and Shuai, K. 1998. Inhibition of Stat1-mediated gene activation by PIAS 1. *Proc. Natl. Acad. Sci. USA* 95: 10626-10631.

CHROMOSOMAL LOCATION

Genetic locus: PIAS3 (human) mapping to 1q21.1.

PRODUCT

PIAS 3 (h4): 293T Lysate represents a lysate of human PIAS 3 transfected 293T cells and is provided as 100 µg protein in 200 µl SDS-PAGE buffer.

APPLICATIONS

PIAS 3 (h4): 293T Lysate is suitable as a Western Blotting positive control for human reactive PIAS 3 antibodies. Recommended use: 10-20 µl per lane.

Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

STORAGE

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. 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 for detailed protocols and support products.