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ProductInformation

Anti-phospho-STAT 1 (pTyr^{701})
Developed in Rabbit, Affinity Purified Antibody

Product Number **S 2565**

Product Description

Anti-phospho-STAT 1 (pTyr^{701}) was produced in rabbit using a synthetic phosphopeptide derived from the region of mouse STAT 1 that contains tyrosine 701 as immunogen. The antibody is affinity purified by epitope-specific affinity chromatography and preadsorbed to remove any reactivity towards the non-phosphorylated STAT 1 protein.

Anti-STAT 1 (pTyr^{701}) specifically recognizes the 88-92 kDa STAT 1 phosphorylated on tyrosine 701. The antibody detects human, mouse, rat and chicken STAT 1 (pTyr^{701}). It has been used in immunoblotting applications.

STAT proteins (Signal Transduction and Activators of Transcription) are latent cytoplasmic transcription factors that have the dual function of signal transduction and activation of transcription. STATs are activated by tyrosine phosphorylation in response to different ligands, after which they translocate to the cell nucleus. The N-terminal region is highly homologous among the STAT proteins and surrounds a completely conserved arginine residue. STATs are a part of the JAK-STAT signaling pathway, a major pathway of the immune system. All cytokines transduce critical signals through this pathway.[1-3]

STAT 1 is activated by a number of different ligands, including IFNα, IFNγ, EGF, PDGF and IL6. STAT 1 homodimer binds to a site termed GAS, first defined as required for IFN-γ induction. Variations on this site are also used in response to IL6, PDGF, and other ligands. Phosphorylation of tyrosine 701 is required for STAT 1 dissociation from IFNGR1, homodimerization, and nuclear translocation. Tyrosine 701 phosphorylation impairment results in loss of STAT 1 functions.[4,5]

STAT 2, in contrast, is activated by IFN-α but not by IFN-γ or any of the other ligands mentioned above. STAT 3 is known to be activated by IGF, IL6, LIF, and perhaps other ligands but is not activated by IFN-γ. STAT 4 is present in high concentration in the testis but has not been found in a phosphorylated form in cells.

Reagent

Mouse Anti-phospho-STAT 1 (pTyr^{701}) is supplied as a solution in Tris-buffered saline, pH 7.4 , with 50% glycerol, 0.01% sodium azide and 1.0 mg/mL BSA (IgG and protease free).

Storage/Stability

Store at –20 °C. For extended storage, upon initial thawing, freeze in working aliquots. Avoid repeated freezing and thawing, to prevent denaturing the antibody. Do not store in a frost-free freezer. Samples at working dilution should be discarded if not used within 12 hours. The antibody is stable for at least 6 months when stored appropriately.

Product Profile

The supplied reagent is sufficient for 10 immunoblots.

The recommended working dilution of 1:500 is determined by immunoblotting using mouse 3T3-L1 adipocytes after exposure to leukemia inhibitory factor (LIF).
Note: In order to obtain best results in different techniques and preparations we recommend determining optimal working concentration by titration test.

Results

Peptide competition data demonstrates that only peptide corresponding to the mouse STAT 1 (pTyr^{701}) blocks the antibody signal, which confirms the specificity of mouse Anti-STAT 1 (pTyr^{701}) for 88-92 kDa protein. It recognizes both human and mouse STAT 1(pTyr^{701}).

References
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AH/JK 5/22/2004