

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human STAT5a. This antibody does not cross-react with STAT5b.
Source	Monoclonal Mouse IgG ₁ Clone # 251610
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	Human STAT5a synthetic peptide SLDSRLSPAGLFTSARGSL Accession # NP_003143
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose. See Certificate of Analysis for details. *Small pack size (-SP) is supplied as a 0.2 µm filtered solution in PBS.

APPLICATIONS

Please Note: Optimal dilutions should be determined by each laboratory for each application. *General Protocols* are available in the *Technical Information* section on our website.

	Recommended Concentration	Sample
Immunocytochemistry	8-25 µg/mL	See Below
Intracellular Staining by Flow Cytometry	0.25 µg/10 ⁶ cells	See Below
CyTOF-ready	Ready to be labeled using established conjugation methods. No BSA or other carrier proteins that could interfere with conjugation.	

DATA

<p>Intracellular Staining by Flow Cytometry</p> <p>Detection of STAT5a in Jurkat Human Cell Line by Flow Cytometry. Jurkat human acute T cell leukemia cell line was stained with Mouse Anti-Human STAT5a Monoclonal Antibody (Catalog # MAB21741, filled histogram) or isotype control antibody (Catalog # MAB002, open histogram), followed by Allophycocyanin-conjugated Anti-Mouse IgG F(ab')₂ Secondary Antibody (Catalog # F0101B). To facilitate intracellular staining, cells were fixed with paraformaldehyde and permeabilized with methanol.</p>	<p>Immunocytochemistry</p> <p>STAT5a in K562 Human Cell Line. STAT5a was detected in immersion fixed K562 human chronic myelogenous leukemia cell line using Mouse Anti-Human STAT5a Monoclonal Antibody (Catalog # MAB21741) at 25 µg/mL for 3 hours at room temperature. Cells were stained using the NorthernLights™ 557-conjugated Anti-Mouse IgG Secondary Antibody (red; Catalog # NL007) and counterstained with DAPI (blue). Specific staining was localized to cytoplasm. View our protocol for Fluorescent ICC Staining of Cells on Coverslips.</p>
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PREPARATION AND STORAGE

Reconstitution	Reconstitute at 0.5 mg/mL in sterile PBS.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below. *Small pack size (-SP) is shipped with polar packs. Upon receipt, store it immediately at -20 to -70 °C
Stability & Storage	Use a manual defrost freezer and avoid repeated freeze-thaw cycles. <ul style="list-style-type: none"> ● 12 months from date of receipt, -20 to -70 °C as supplied. ● 1 month, 2 to 8 °C under sterile conditions after reconstitution. ● 6 months, -20 to -70 °C under sterile conditions after reconstitution.

BACKGROUND

STAT5a (Signal Transducer and Activator of Transcription-5a) is one of two closely related genes that belong to the STAT family of transcription factors. It is a 91 kDa cytosolic protein that contains an N-terminal domain (with an NES/Nuclear Export Signal) a coiled-coiled region (with an NLS/Nuclear Localization Signal) a DNA-binding site that recognizes a GAS (Gamma-interferon Activated Site) motif, an SH2 domain that allows for dimerization, and a C-terminal transactivation domain. STAT5a likely exists in a quiescent state as a cytoplasmic anti-parallel homodimer. Following activation of both tyrosine and non-tyrosine kinase membrane-bound receptors, STAT5a is phosphorylated, increasing its MW by some 5-6 kDa. Phosphorylated STAT5a will enter the nucleus as either a homodimer (or heterodimer with STAT5b), or as a complex with the intracellular domain of a tyrosine kinase receptor such as ErbB4. Once in the nucleus, STAT5a will form a homotetramer and bind either GAS or GAS-related sequences in gene regulatory regions. Notably, it is suggested that STAT5a may "cycle" through the nucleus without phosphorylation, a process that would seem to involve Importins α3 and β1. STAT5a is related to STAT5b through gene duplication. They show 92% amino acid (aa) sequence identity, with the major differences existing over aa 45-56 and 773-794. The genes are not entirely redundant; STAT5a activates NDGR1 and SH2, while STAT5b regulates the Treg T cell genes, FoxP3 and CD25/IL-2Rα.