# Anti-STAT1 Antibody [G3-B11]

## M1407-1

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| **Product Type:** | Mouse monoclonal IgG2b, primary antibodies |
| **Species reactivity:** | Human |
| **Applications:** | WB, IF-Cell, IHC-P, IF-Tissue |
| **Molecular Wt:** | Predicted band size: 87/83 kDa |
| **Clone number:** | G3-B11 |

**Description:** STAT1 is a member of the Signal Transducers and Activators of Transcription family of transcription factors. STAT1 is involved in upregulating genes due to a signal by either type I, type II, or type III interferons. In response to IFN-γ stimulation, STAT1 forms homodimers or heterodimers with STAT3 that bind to the GAS (Interferon-Gamma-Activated Sequence) promoter element; in response to either IFN-α or IFN-β stimulation, STAT1 forms a heterodimer with STAT2 that can bind the ISRE (Interferon-Stimulated Response Element) promoter element. The phosphorylated STATs dimerize and associate with ISGF3G/IRF-9 to form a complex termed ISGF3 transcription factor that enters the nucleus. ISGF3 binds to the IFN stimulated response element (ISRE) to activate the transcription of IFN-stimulated genes (ISG), which drive the cell in an antiviral state. In response to type II IFN (IFN-gamma), STAT1 is tyrosine- and serine-phosphorylated.

**Immunogen:** Recombinant protein within Human STAT1 aa 71-270 / 750.

**Positive control:** Jurkat cell lysate, A431 cell lysate, HeLa cell lysate, A549 cell lysate, SK-Br-3 cell lysate, SK-MEL-28 cell lysate, MCF7 cell lysate, HT-29 cell lysate, HT-29, human breast cancer tissue, human spleen tissue.

**Subcellular location:** Cytoplasm, nucleus

**Database links:** SwissProt: P42224 Human

**Recommended Dilutions:**

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| **WB** | 1:1,000-1:2,000 |
| **IF-Cell** | 1:100-1:200 |
| **IHC-P** | 1:1,000 |
| **IF-Tissue** | 1:200 |

**Storage Buffer:** 1*PBS (pH7.4), 0.2% BSA, 40% Glycerol. Preservative: 0.05% Sodium Azide.

**Storage Instruction:** Store at +4℃ after thawing. Aliquot store at -20℃ or -80℃. Avoid repeated freeze / thaw cycles.

**Purity:** Protein A affinity purified.

## Images

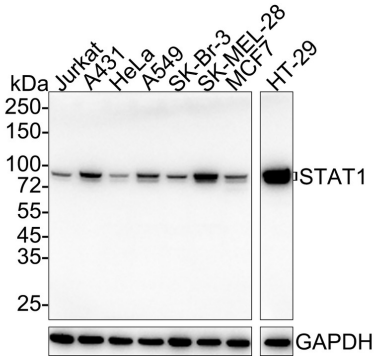


**Fig1:** Western blot analysis of STAT1 on different lysates with Mouse anti-STAT1 antibody (M1407-1) at 1/1,000 dilution.

Lane 1: Jurkat cell lysate
Lane 2: A431 cell lysate
Lane 3: HeLa cell lysate
Lane 4: A549 cell lysate
Lane 5: SK-Br-3 cell lysate
Lane 6: SK-MEL-28 cell lysate
Lane 7: MCF7 cell lysate
Lane 8: HT-29 cell lysate

Lysates/proteins at 15 µg/Lane.

Predicted band size: 87/83 kDa
Observed band size: 87/83 kDa

Exposure time: 1 minute 2 seconds; ECL: K1801;

4-20% SDS-PAGE gel.

Proteins were transferred to a PVDF membrane and blocked with 5% NFDM/TBST for 1 hour at room temperature. The primary antibody (M1407-1) at 1/1,000 dilution was used in 5% NFDM/TBST at 4℃ overnight. Goat Anti-Mouse IgG - HRP Secondary Antibody (HA1006) at 1/50,000 dilution was used for 1 hour at room temperature.

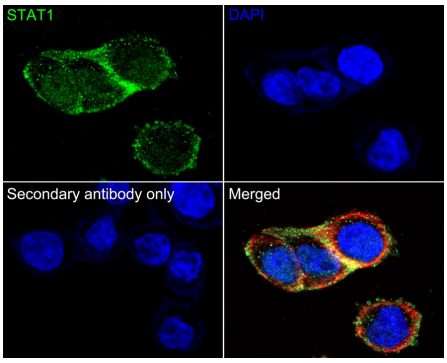


**Fig2:** Immunocytochemistry analysis of HT-29 cells labeling STAT1 with Mouse anti-STAT1 antibody (M1407-1) at 1/100 dilution.

Cells were fixed in 4% paraformaldehyde for 20 minutes at room temperature, permeabilized with 0.1% Triton X-100 in PBS for 5 minutes at room temperature, then blocked with 1% BSA in 10% negative goat serum for 1 hour at room temperature. Cells were then incubated with Mouse anti-STAT1 antibody (M1407-1) at 1/100 dilution in 1% BSA in PBST overnight at 4 ℃. Goat Anti-Mouse IgG H&L (iFluor™ 488, HA1125) was used as the secondary antibody at 1/1,000 dilution. PBS instead of the primary antibody was used as the secondary antibody only control. Nuclear DNA was labelled in blue with DAPI.

beta Tubulin (ET1602-4, red) was stained at 1/100 dilution overnight at +4℃. Goat Anti-Rabbit IgG H&L (iFluor™ 594, HA1122) were used as the secondary antibody at 1/1,000 dilution.

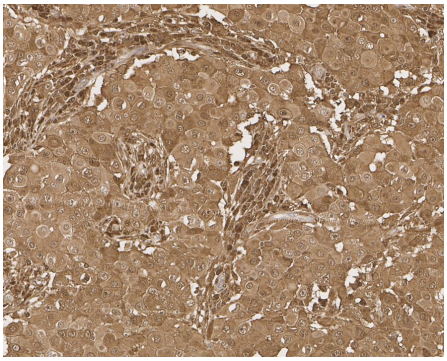

**Fig3:** Immunohistochemical analysis of paraffin-embedded human breast cancer tissue with Mouse anti-STAT1 antibody (M1407-1) at 1/1,000 dilution.

The section was pre-treated using heat mediated antigen retrieval with sodium citrate buffer (pH 6.0) for 2 minutes. The tissues were blocked in 1% BSA for 20 minutes at room temperature, washed with $ddH_2O$ and PBS, and then probed with the primary antibody (M1407-1) at 1/1,000 dilution for 1 hour at room temperature. The detection was performed using an HRP conjugated compact polymer system. DAB was used as the chromogen. Tissues were counterstained with hematoxylin and mounted with DPX.

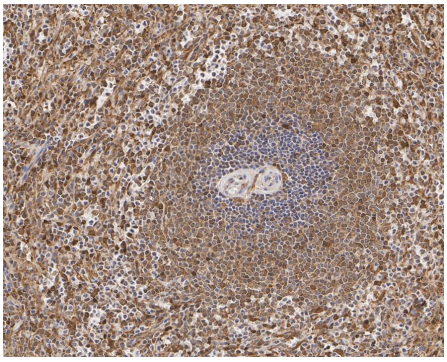

**Fig4:** Immunohistochemical analysis of paraffin-embedded human spleen tissue with Mouse anti-STAT1 antibody (M1407-1) at 1/1,000 dilution.

The section was pre-treated using heat mediated antigen retrieval with sodium citrate buffer (pH 6.0) for 2 minutes. The tissues were blocked in 1% BSA for 20 minutes at room temperature, washed with $ddH_2O$ and PBS, and then probed with the primary antibody (M1407-1) at 1/1,000 dilution for 1 hour at room temperature. The detection was performed using an HRP conjugated compact polymer system. DAB was used as the chromogen. Tissues were counterstained with hematoxylin and mounted with DPX.

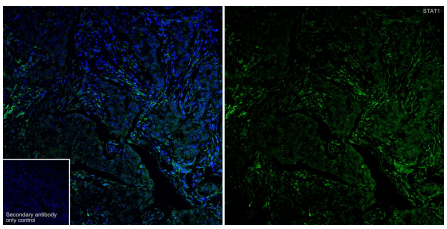

**Fig5:** Immunofluorescence analysis of paraffin-embedded human breast cancer tissue labeling STAT1 with Mouse anti-STAT1 antibody (M1407-1) at 1/200 dilution.

The section was pre-treated using heat mediated antigen retrieval with sodium citrate buffer (pH 6.0) for 2 minutes. The tissues were blocked in 10% negative goat serum for 1 hour at room temperature, washed with PBS, and then probed with the primary antibody (M1407-1, green) at 1/200 dilution overnight at 4 ℃, washed with PBS. Goat Anti-Mouse IgG H&L (iFluor™ 488, HA1125) was used as the secondary antibody at 1/1,000 dilution. Nuclei were counterstained with DAPI (blue).

## Background References

1. Clark DN et al. Unique aspects of IFN-γ/STAT1 signaling in neurons. Immunol Rev. 2022 Oct
2. Butturini E et al. Redox Regulation of STAT1 and STAT3 Signaling. Int J Mol Sci. 2020 Sep