

**Anti-STAT1 [Asym-dimethyl Arg31] (RABBIT) Antibody**  
**STAT1 R31-Me2a Antibody**  
**Catalog # ASR5529****Specification**

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**Anti-STAT1 [Asym-dimethyl Arg31] (RABBIT) Antibody - Product Information**

Host	Rabbit
Conjugate	Unconjugated
Target Species	Human
Reactivity	Human
Clonality	Polyclonal
Application	WB, E, I, LCI
Application Note	Anti-STAT1 [Asym-dimethyl Arg31] antibody has been tested by Dot Blot and is useful for Western Blot. Specific conditions for reactivity should be optimized by the end user. Expect a band approximately ~87 kDa corresponding to STAT1 protein by Western Blotting in the appropriate cell lysate or extract.
Physical State	Liquid (sterile filtered)
Buffer	0.02 M Potassium Phosphate, 0.15 M Sodium Chloride, pH 7.2
Immunogen	STAT1 [Asym-dimethyl Arg] affinity purified antibody was prepared from whole rabbit serum produced by repeated immunizations with a synthetic monomethylated peptide surrounding Arginine 31 of human STAT.
Stabilizer	30% Glycerol
Preservative	0.05% (w/v) Sodium Azide

**Anti-STAT1 [Asym-dimethyl Arg31] (RABBIT) Antibody - Additional Information****Gene ID** 6772**Purity**

Anti-STAT1 R31-Me2a was affinity purified from monospecific antiserum by immunoaffinity chromatography. This antibody reacts with human STAT1 surrounding aa31 and is specific for Me2a. A BLAST analysis was used to suggest cross-reactivity with Human, mouse, and rat. Cross-reactivity with STAT1 from other sources has not been determined. Minimal cross reactivity shown with STAT4 and STAT5 surrounding aa31.

**Storage Condition**

Store vial at -20° C prior to opening. Aliquot contents and freeze at -20° C or below for extended storage. Avoid cycles of freezing and thawing. Centrifuge product if not completely clear after standing at room temperature. This product is stable for several weeks at 4° C as an undiluted liquid. Dilute only prior to immediate use.

**Precautions Note**

This product is for research use only and is not intended for therapeutic or diagnostic applications.

## Anti-STAT1 [Asym-dimethyl Arg31] (RABBIT) Antibody - Protein Information

**Name** STAT1

### Function

Signal transducer and transcription activator that mediates cellular responses to interferons (IFNs), cytokine KITLG/SCF and other cytokines and other growth factors (PubMed:<a href="http://www.uniprot.org/citations/12764129" target="\_blank">12764129</a>, PubMed:<a href="http://www.uniprot.org/citations/12855578" target="\_blank">12855578</a>, PubMed:<a href="http://www.uniprot.org/citations/15322115" target="\_blank">15322115</a>, PubMed:<a href="http://www.uniprot.org/citations/23940278" target="\_blank">23940278</a>, PubMed:<a href="http://www.uniprot.org/citations/34508746" target="\_blank">34508746</a>, PubMed:<a href="http://www.uniprot.org/citations/35568036" target="\_blank">35568036</a>, PubMed:<a href="http://www.uniprot.org/citations/9724754" target="\_blank">9724754</a>). Following type I IFN (IFN-alpha and IFN-beta) binding to cell surface receptors, signaling via protein kinases leads to activation of Jak kinases (TYK2 and JAK1) and to tyrosine phosphorylation of STAT1 and STAT2. The phosphorylated STATs dimerize and associate with ISGF3G/IRF-9 to form a complex termed ISGF3 transcription factor, that enters the nucleus (PubMed:<a href="http://www.uniprot.org/citations/28753426" target="\_blank">28753426</a>, PubMed:<a href="http://www.uniprot.org/citations/35568036" target="\_blank">35568036</a>). 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 (PubMed:<a href="http://www.uniprot.org/citations/28753426" target="\_blank">28753426</a>, PubMed:<a href="http://www.uniprot.org/citations/35568036" target="\_blank">35568036</a>). In response to type II IFN (IFN-gamma), STAT1 is tyrosine- and serine-phosphorylated (PubMed:<a href="http://www.uniprot.org/citations/26479788" target="\_blank">26479788</a>). It then forms a homodimer termed IFN-gamma-activated factor (GAF), migrates into the nucleus and binds to the IFN gamma activated sequence (GAS) to drive the expression of the target genes, inducing a cellular antiviral state (PubMed:<a href="http://www.uniprot.org/citations/8156998" target="\_blank">8156998</a>). Becomes activated in response to KITLG/SCF and KIT signaling (PubMed:<a href="http://www.uniprot.org/citations/15526160" target="\_blank">15526160</a>). May mediate cellular responses to activated FGFR1, FGFR2, FGFR3 and FGFR4 (PubMed:<a href="http://www.uniprot.org/citations/19088846" target="\_blank">19088846</a>). Following bacterial lipopolysaccharide (LPS)-induced TLR4 endocytosis, phosphorylated at Thr-749 by IKBKB which promotes binding of STAT1 to the 5'-TTTGAGGC-3' sequence in the ARID5A promoter, resulting in transcriptional activation of ARID5A and subsequent ARID5A-mediated stabilization of IL6 (PubMed:<a href="http://www.uniprot.org/citations/32209697" target="\_blank">32209697</a>). Phosphorylation at Thr-749 also promotes binding of STAT1 to the 5'-TTTGAGTC-3' sequence in the IL12B promoter and activation of IL12B transcription (PubMed:<a href="http://www.uniprot.org/citations/32209697" target="\_blank">32209697</a>). Involved in food tolerance in small intestine: associates with the Gasdermin-D, p13 cleavage product (13 kDa GSDMD) and promotes transcription of CIITA, inducing type 1 regulatory T (Tr1) cells in upper small intestine (By similarity).

### Cellular Location

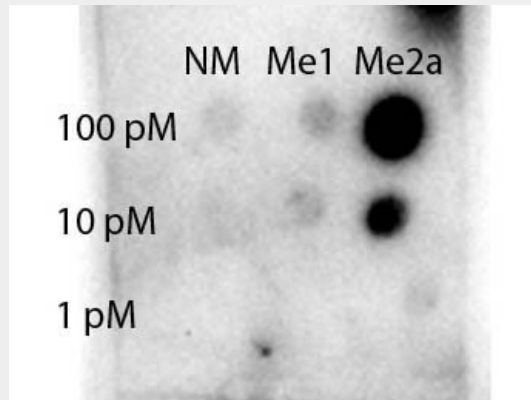
Cytoplasm. Nucleus Note=Translocated into the nucleus upon tyrosine phosphorylation and dimerization, in response to IFN-gamma and signaling by activated FGFR1, FGFR2, FGFR3 or FGFR4 (PubMed:15322115). Monomethylation at Lys- 525 is required for phosphorylation at Tyr-701 and translocation into the nucleus (PubMed:28753426). Translocates into the nucleus in response to interferon-beta stimulation (PubMed:26479788)

## Anti-STAT1 [Asym-dimethyl Arg31] (RABBIT) Antibody - Protocols

Provided below are standard protocols that you may find useful for product applications.

- [Western Blot](#)
- [Blocking Peptides](#)
- [Dot Blot](#)
- [Immunohistochemistry](#)
- [Immunofluorescence](#)
- [Immunoprecipitation](#)
- [Flow Cytometry](#)
- [Cell Culture](#)

#### **Anti-STAT1 [Asym-dimethyl Arg31] (RABBIT) Antibody - Images**



Dot blot of Rabbit Anti-STAT1 R31-Me2a antibody. Antigen: non-modified, monomethylated and asymmetric dimethylated forms of the immunizing peptide. Load: 100, 10, or 1 picomolar as indicated. Primary antibody: STAT1 R31-Me2a antibody at 1:1000 for 90 min at RT. (Date: 11/04/14; Exposure time: 48 seconds).

#### **Anti-STAT1 [Asym-dimethyl Arg31] (RABBIT) Antibody - Background**

Signal transducer and activator of transcription 1 (Stat1) belongs to a family of cytoplasmic transcription factors that can be activated by a cell surface receptor. Stat1 has two isoforms. Stat1 has been found to be inappropriately activated in many tumors. In addition to tyrosine phosphorylation, Stat1 is phosphorylated through a p38 mitogen-activated protein kinase (MAPK)-dependent pathway at Ser727 in response to IFN-g and other cellular stresses. Stat1 is localized in the cytoplasm and upon phosphorylation at Y701 is translocated to the nucleus.