

Product datasheet

Anti-STAT1 (phospho Y701) antibody [EPR3147] ab109457

Recombinant RabMAb

★★★★★ [1 Abreviews](#) [8 References](#) [4 Images](#)

Overview

Product name	Anti-STAT1 (phospho Y701) antibody [EPR3147]
Description	Rabbit monoclonal [EPR3147] to STAT1 (phospho Y701)
Host species	Rabbit
Specificity	<i>Stimulation may be required to allow detection of the phosphorylated protein. Please see images below for recommended treatment conditions and positive controls.</i>
Tested applications	Suitable for: WB, Dot blot Unsuitable for: Flow Cyt, ICC/IF, IHC-P or IP
Species reactivity	Reacts with: Human
Immunogen	Synthetic peptide. This information is proprietary to Abcam and/or its suppliers.
Positive control	WB: A431 cell lysate treated with EGF.
General notes	<p>This product is a recombinant monoclonal antibody, which offers several advantages including:</p> <ul style="list-style-type: none"> - High batch-to-batch consistency and reproducibility - Improved sensitivity and specificity - Long-term security of supply - Animal-free production <p>For more information see here.</p> <p>Our RabMAb[®] technology is a patented hybridoma-based technology for making rabbit monoclonal antibodies. For details on our patents, please refer to RabMAb[®] patents.</p> <p>Mouse, Rat: We have preliminary internal testing data to indicate this antibody may not react with these species. Please contact us for more information.</p>

Properties

Form	Liquid
Storage instructions	Shipped at 4°C. Store at -20°C.
Storage buffer	<p>pH: 7.20</p> <p>Preservative: 0.01% Sodium azide</p> <p>Constituents: 9% PBS, 40% Glycerol (glycerin, glycerine), 0.05% BSA, 50% Tissue culture</p>

	supernatant
Purity	Protein A purified
Clonality	Monoclonal
Clone number	EPR3147
Isotype	IgG

Applications

The Abpromise guarantee Our **Abpromise guarantee** covers the use of ab109457 in the following tested applications. The application notes include recommended starting dilutions; optimal dilutions/concentrations should be determined by the end user.

Application	Abreviews	Notes
WB	★★★★★ (1)	1/1000 - 1/10000. Predicted molecular weight: 87 kDa.
Dot blot		1/1000.

Application notes Is unsuitable for Flow Cyt, ICC/IF, IHC-P or IP.

Target

Function Signal transducer and activator of transcription that mediates signaling by interferons (IFNs). Following type I IFN (IFN-alpha and IFN-beta) binding to cell surface receptors, Jak kinases (TYK2 and JAK1) are activated, leading to tyrosine phosphorylation of STAT1 and STAT2. The phosphorylated STATs dimerize, 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 interferon stimulated genes, which drive the cell in an antiviral state. In response to type II IFN (IFN-gamma), STAT1 is tyrosine- and serine-phosphorylated. 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.

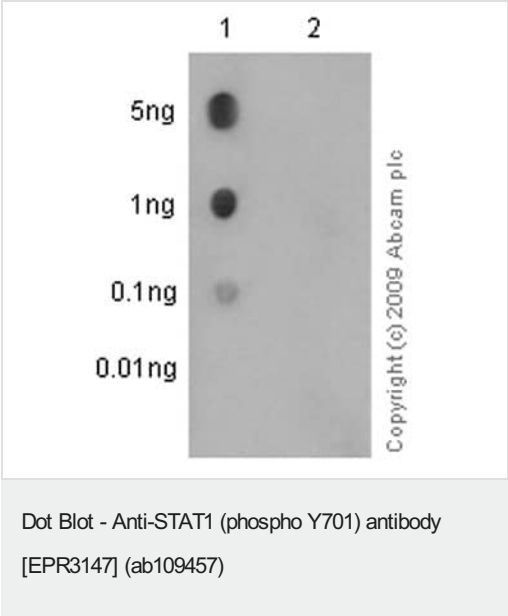
Involvement in disease Note=STAT1 deficiency results in impaired immune response leading to severe mycobacterial and viral diseases. In the case of complete deficiency, patients can die of viral disease. Defects in STAT1 are a cause of mendelian susceptibility to mycobacterial disease (MSMD) [MIM:209950]; also known as familial disseminated atypical mycobacterial infection. This rare condition confers predisposition to illness caused by moderately virulent mycobacterial species, such as Bacillus Calmette-Guerin (BCG) vaccine and environmental non-tuberculous mycobacteria, and by the more virulent Mycobacterium tuberculosis. Other microorganisms rarely cause severe clinical disease in individuals with susceptibility to mycobacterial infections, with the exception of Salmonella which infects less than 50% of these individuals. The pathogenic mechanism underlying MSMD is the impairment of interferon-gamma mediated immunity whose severity determines the clinical outcome. Some patients die of overwhelming mycobacterial disease with lepromatous-like lesions in early childhood, whereas others develop, later in life, disseminated but curable infections with tuberculoid granulomas. MSMD is a genetically heterogeneous disease with autosomal recessive, autosomal dominant or X-linked inheritance.

Sequence similarities Belongs to the transcription factor STAT family.
Contains 1 SH2 domain.

Post-translational Phosphorylated on tyrosine and serine residues in response to IFN-alpha, IFN-gamma, PDGF

modifications	<p>and EGF. Phosphorylation on Tyr-701 (lacking in beta form) by JAK promotes dimerization and subsequent translocation to the nucleus. Phosphorylation on Ser-727 by several kinases including MAPK14, ERK1/2 and CAMKII on IFN-gamma stimulation, regulates STAT1 transcriptional activity. Phosphorylation on Ser-727 promotes sumoylation though increasing interaction with PIAS. Phosphorylation on Ser-727 by PKCdelta induces apoptosis in response to DNA-damaging agents.</p> <p>Sumoylated by SUMO1, SUMO2 and SUMO3. Sumoylation is enhanced by IFN-gamma-induced phosphorylation on Ser-727, and by interaction with PIAS proteins. Enhances the transactivation activity.</p> <p>ISGylated.</p>
Cellular localization	Cytoplasm. Nucleus. Translocated into the nucleus in response to IFN-gamma-induced tyrosine phosphorylation and dimerization.

Images



Primary antibody dilution: 1/1000

Secondary antibody: goat anti-rabbit IgG, (H+L), peroxidase conjugated

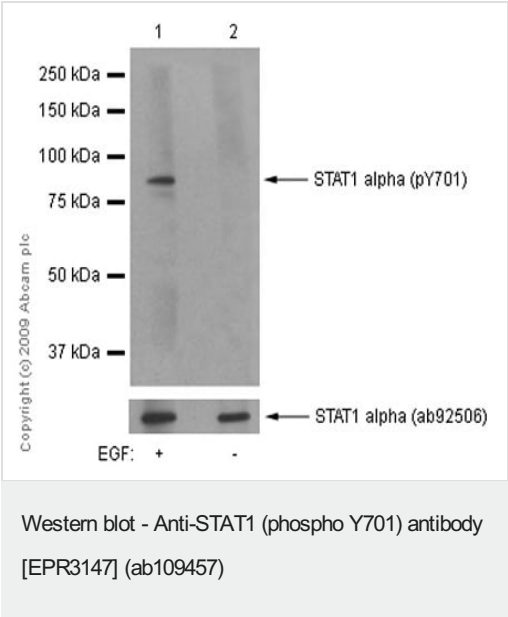
Secondary antibody dilution: 1/2500

Blocking & dilution buffer: 5% NFDM/TBST

Lane 1 sample: STAT1 (pY701) phospho peptide

Lane 2 sample: STAT1 non-phospho peptide

Exposure time: 3 minutes



All lanes : Anti-STAT1 (phospho Y701) antibody [EPR3147] (ab109457)

Lane 1 : A431 (Human epidermoid carcinoma) treated with Epidermal Growth Factor (EGF) whole cell lysates

Lane 2 : Untreated A431 (human epidermoid carcinoma) whole cell lysates

Lysates/proteins at 10 µg per lane.

Secondary

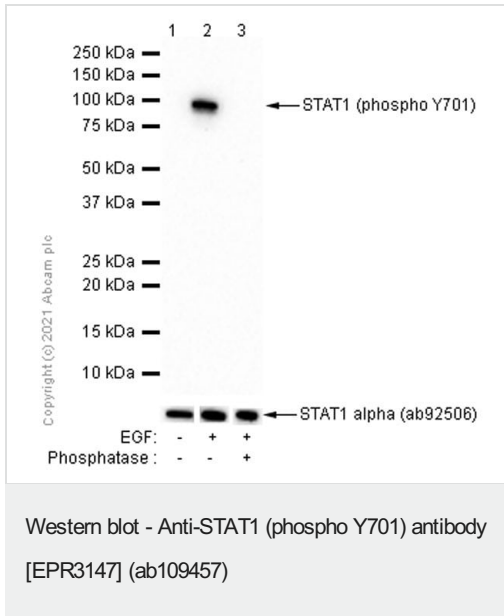
All lanes : Goat anti-rabbit IgG, (H+L), peroxidase conjugated at 1/1000 dilution

Predicted band size: 87 kDa

Observed band size: 91 kDa

Exposure time: 3 minutes

Blocking and dilution buffer: 5% NFDM /TBST



All lanes : Anti-STAT1 (phospho Y701) antibody [EPR3147] (ab109457) at 1/1000 dilution (purified)

Lane 1 : Untreated A431 (Human epidermoid carcinoma epithelial cell) whole cell lysate at 15 µg

Lane 2 : A431 treated with 100ng/ml Epidermal Growth Factor (EGF) for 30 min whole cell lysate at 15 µg

Lane 3 : A431 treated with 100ng/ml Epidermal Growth Factor (EGF) for 30 min whole cell lysate, then the membrane was incubated with Alkaline Phosphatase for 1 hour

Secondary

All lanes : Goat Anti-Rabbit IgG H&L (HRP) (**ab97051**) at 1/20000 dilution

Predicted band size: 87 kDa

Observed band size: 91 kDa

Exposure time: 60 seconds

Blocking and diluting buffer and concentration: 5% NFDM/TBST

Why choose a recombinant antibody?



Research with confidence
Consistent and reproducible results



Long-term and scalable supply
Recombinant technology



Success from the first experiment
Confirmed specificity



Ethical standards compliant
Animal-free production

Anti-STAT1 (phospho Y701) antibody [EPR3147]
(ab109457)

Please note: All products are "FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC PROCEDURES"

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