

## Stat3 (Phospho Ser727) Rabbit pAb

Catalog#: AP0250 | Size: 30µL/50µL/100µL

### Main Information

Target	Host Species	Reactivity	Application	MW	Conjugated/Modification
Rb	Rabbit	Human, Mouse, Rat, Monkey	IF, WB, IHC, IP, ELISA	85kD (Observed)	Phospho

### Detailed Information

Recommended Dilution Ratio	IF 1:50-200; WB 1:500-1:2000; IHC 1:100-1:300; IP 2-5 ug/mg lysate; ELISA 1:10000; Not yet tested in other applications
Formulation	Liquid in PBS containing 50% glycerol, 0.5% BSA and 0.02% sodium azide.
Specificity	Phospho-Stat3 (S727) Polyclonal Antibody detects endogenous levels of Stat3 protein only when phosphorylated at S727. The name of modified sites may be influenced by many factors, such as species (the modified site was not originally found in human samples) and the change of protein sequence (the previous protein sequence is incomplete, and the protein sequence may be prolonged with the development of protein sequencing technology). When naming, we will use the "numbers" in historical reference to keep the sites consistent with the reports. The antibody binds to the following modification sequence (lowercase letters are modification sites):PMsPR
Purification	The antibody was affinity-purified from rabbit antiserum by affinity-chromatography using epitope-specific immunogen.
Storage	-15°C to -25°C/1 year(Do not lower than -25°C)
Concentration	1 mg/ml
MW(Observed)	85kD
Modification	Phospho
Clonality	Polyclonal
Isotype	IgG

## Antigen&Target Information

Immunogen	The antiserum was produced against synthesized peptide derived from human STAT3 around the phosphorylation site of Ser727. AA range:694-743
Specificity	Phospho-Stat3 (S727) Polyclonal Antibody detects endogenous levels of Stat3 protein only when phosphorylated at S727.The name of modified sites may be influenced by many factors, such as species (the modified site was not originally found in human samples) and the change of protein sequence (the previous protein sequence is incomplete, and the protein sequence may be prolonged with the development of protein sequencing technology). When naming, we will use the "numbers" in historical reference to keep the sites consistent with the reports. The antibody binds to the following modification sequence (lowercase letters are modification sites):PMsPR
Gene Name	STAT3
Protein Name	Signal transducer and activator of transcription 3
Other Name	STAT3 ;APRF ;Signal transducer and activator of transcription 3 ;Acute-phase response factor

## Database Link

Organism	Gene ID	SwissProt
Human	6774	P40763
Mouse	20848	P42227
Rat	25125	P52631

## Background

The protein encoded by this gene is a member of the STAT protein family. In response to cytokines and growth factors, STAT family members are phosphorylated by the receptor associated kinases, and then form homo- or heterodimers that translocate to the cell nucleus where they act as transcription activators. This protein is activated through phosphorylation in response to various cytokines and growth factors including IFNs, EGF, IL5, IL6, HGF, LIF and BMP2. This protein mediates the expression of a variety of genes in response to cell stimuli, and thus plays a key role in many cellular processes such as cell growth and apoptosis. The small GTPase Rac1 has been shown to bind and regulate the activity of this protein. PIAS3 protein is a specific inhibitor of this protein. Mutations in this gene are associated with infantile-onset multisystem autoimmune disease and hyper.

## Function

Disease:Defects in STAT3 are the cause of hyperimmunoglobulin E recurrent infection syndrome autosomal dominant (AD-HIES) [MIM:147060]; also known as hyper-IgE syndrome or Job syndrome. AD-HIES is a rare disorder of immunity and connective tissue characterized by immunodeficiency, chronic eczema, recurrent Staphylococcal infections, increased serum IgE, eosinophilia, distinctive coarse facial appearance, abnormal dentition, hyperextensibility of the joints, and bone fractures.,Function:Transcription factor that binds to the interleukin-6 (IL-6)-responsive elements identified in the promoters of various acute-phase protein genes. Activated by IL31 through IL31RA.,miscellaneous:Involved in the gp130-mediated signaling pathway.,online information:STAT3 entry,online information:STAT3 mutation db,PTM:Tyrosine phosphorylated in response to IL-6, IL-11, CNTF, LIF, CSF-1, EGF, PDGF, IFN-alpha and OSM. Phosphorylated on serine upon DNA damage, probably by ATM or ATR. Serine phosphorylation is important for the formation of stable DNA-binding STAT3 homodimers and maximal transcriptional activity.,similarity:Belongs to the transcription factor STAT family.,similarity:Contains 1 SH2 domain.,subcellular location:Shuttles between the nucleus and the cytoplasm. Constitutive nuclear presence is independent of tyrosine phosphorylation.,subunit:Forms a homodimer or a heterodimer with a related-

Interacts with IL23R in presence of IL23. Interacts with IL31RA. Interacts with SIPAR. Interacts (via SH2 domain) with NLK (By similarity). Interacts with KPNA4 and KPNA5; KPNA4 may be the primary mediator of nuclear import (By similarity). Interacts with TMF1.,tissue specificity:Heart, brain, placenta, lung, liver, skeletal muscle, kidney and pancreas.

### Cellular Localization

Cytoplasm. Nucleus. Shuttles between the nucleus and the cytoplasm. Translocated into the nucleus upon tyrosine phosphorylation and dimerization, in response to signaling by activated FGFR1, FGFR2, FGFR3 or FGFR4. Constitutive nuclear presence is independent of tyrosine phosphorylation. Predominantly present in the cytoplasm without stimuli. Upon leukemia inhibitory factor (LIF) stimulation, accumulates in the nucleus. The complex composed of BART and ARL2 plays an important role in the nuclear translocation and retention of STAT3. Identified in a complex with LYN and PAG1.

### Tissue Expression

Heart, brain, placenta, lung, liver, skeletal muscle, kidney and pancreas. Expressed in naive CD4(+) T cells as well as T-helper Th17, Th1 and Th2 cells (PubMed:31899195).

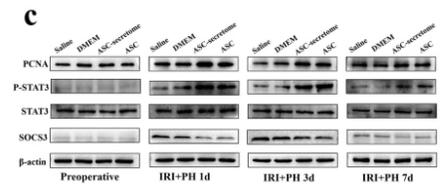
### Research Areas

- EGFR tyrosine kinase inhibitor resistance
- Chemokine signaling pathway
- HIF-1 signaling pathway
- FoxO signaling pathway
- Necroptosis
- Signaling pathways regulating pluripotency of stem cells
- JAK-STAT signaling pathway
- Th17 cell differentiation
- Prolactin signaling pathway
- Adipocytokine signaling pathway
- Insulin resistance
- AGE-RAGE signaling pathway in diabetic complications
- Growth hormone synthesis, secretion and action
- Toxoplasmosis
- Hepatitis C
- Hepatitis B
- Measles
- Human cytomegalovirus infection
- Kaposi sarcoma-associated herpesvirus infection
- Epstein-Barr virus infection
- Coronavirus disease - COVID-19
- Pathways in cancer
- Viral carcinogenesis
- Proteoglycans in cancer
- MicroRNAs in cancer
- Chemical carcinogenesis - receptor activation
- Pancreatic cancer
- Acute myeloid leukemia
- Non-small cell lung cancer
- PD-L1 expression and PD-1 checkpoint pathway in cancer
- Inflammatory bowel disease
- Lipid and atherosclerosis

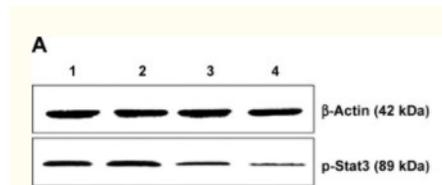
## Signaling Pathway

Cellular Processes >> Cell growth and death >> Necroptosis  
 Cellular Processes >> Cellular community - eukaryotes >> Signaling pathways regulating pluripotency of stem cells  
 Organismal Systems >> Immune system >> Th17 cell differentiation  
 Organismal Systems >> Immune system >> Chemokine signaling pathway  
 Organismal Systems >> Endocrine system >> Adipocytokine signaling pathway  
 Organismal Systems >> Endocrine system >> Prolactin signaling pathway  
 Organismal Systems >> Endocrine system >> Growth hormone synthesis, secretion and action  
 Human Diseases >> Cancer: overview >> Pathways in cancer  
 Human Diseases >> Cancer: overview >> MicroRNAs in cancer  
 Human Diseases >> Cancer: overview >> PD-L1 expression and PD-1 checkpoint pathway in cancer  
 Human Diseases >> Cancer: specific types >> Pancreatic cancer  
 Human Diseases >> Cancer: specific types >> Acute myeloid leukemia  
 Human Diseases >> Cancer: specific types >> Non-small cell lung cancer  
 Human Diseases >> Immune disease >> Inflammatory bowel disease  
 Environmental Information Processing >> Signal transduction >> JAK-STAT signaling pathway  
 Environmental Information Processing >> Signal transduction >> HIF-1 signaling pathway  
 Environmental Information Processing >> Signal transduction >> FoxO signaling pathway

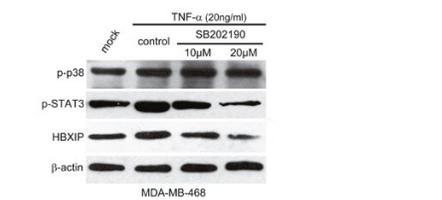
## Validation Data



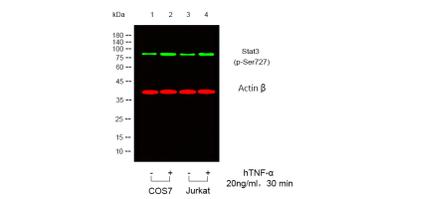
Jiao, Z., Ma, Y., Zhang, Q. et al. The adipose-derived mesenchymal stem cell secretome promotes hepatic regeneration in miniature pigs after liver ischaemia-reperfusion combined with partial resection. *Stem Cell Res Ther* 12, 218 (2021).



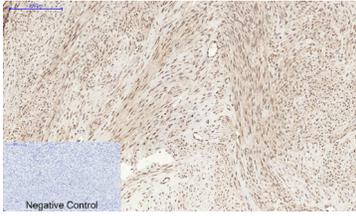
Tang, Qiusha, et al. "Combination of PEI-MnO<sub>2</sub>, 5ZnO<sub>2</sub>, 5Fe<sub>2</sub>O<sub>4</sub> nanoparticles and pHsp 70-HSV-TK/GCV with magnet-induced heating for treatment of hepatoma." *International journal of nanomedicine* 10 (2015): 7129.



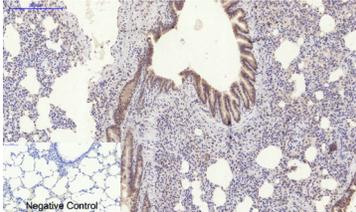
Cai, Xiaoli, et al. "Inflammatory factor TNF- $\alpha$  promotes the growth of breast cancer via the positive feedback loop of TNFR1/NF- $\kappa$ B (and/or p38)/p-STAT3/HBXIP/TNFR1." *Oncotarget* 8.35 (2017): 58338.



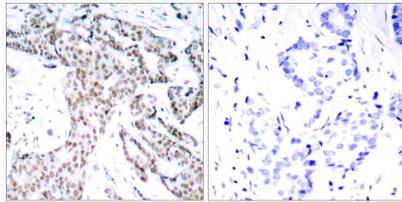
Western blot analysis of lysates from COS7, Jurkat cells, treated or untreated with TNF $\alpha$ , (Green) primary antibody was diluted at 1:1000, 4<sup>o</sup> over night, secondary antibody was diluted at 1:10000, 37<sup>o</sup> 1hour. (Red) loading control antibody was diluted at 1:5000 as loading control, 4<sup>o</sup> over night, secondary antibody was diluted at 1:10000, 37<sup>o</sup> 1hour.



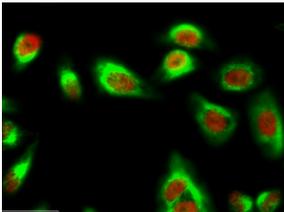
Immunohistochemical analysis of paraffin-embedded Human-uterus tissue. 1,Stat3 (phospho Ser727) Polyclonal Antibody was diluted at 1:200(4°C,overnight). 2, Sodium citrate pH 6.0 was used for antibody retrieval(>98°C,20min). 3,Secondary antibody was diluted at 1:200(room temperature, 30min). Negative control was used by secondary antibody only.



Immunohistochemical analysis of paraffin-embedded Rat-lung tissue. 1,Stat3 (phospho Ser727) Polyclonal Antibody was diluted at 1:200(4°C,overnight). 2, Sodium citrate pH 6.0 was used for antibody retrieval(>98°C,20min). 3,Secondary antibody was diluted at 1:200(room temperature, 30min). Negative control was used by secondary antibody only.



Immunohistochemistry analysis of paraffin-embedded human breast carcinoma, using STAT3 (Phospho-Ser727) Antibody. The picture on the right is blocked with the phospho peptide.



Immunofluorescence analysis of Hela cell. 1,Stat3 (phospho Ser727) Polyclonal Antibody(red) was diluted at 1:200(4° overnight). Caspase 9 Monoclonal Antibody(3-20)(green) was diluted at 1:200(4° overnight). 2, Goat Anti Rabbit Alexa Fluor 594 Catalog:RS3611 was diluted at 1:1000(room temperature, 50min). Goat Anti Mouse Alexa Fluor 488 Catalog:RS3208 was diluted at 1:1000(room temperature, 50min).

## Contact Information

☎ +886-32876194    🌐 [www.acebiolab.com](http://www.acebiolab.com)    ✉ Order: [order@acebiolab.com](mailto:order@acebiolab.com)    ✉ Support: [service@acebiolab.com](mailto:service@acebiolab.com)  
 📍 RM. 7, 13F., NO. 268, SEC. 1, GAOTIEZHANQIAN W. RD., ZHONGLI DIST., TAOYUAN CITY 320016, TAIWAN (R.O.C.)

For Research Use Only. Not for Diagnostic Purposes