STAT3 (Phospho Tyr705) (PT0742R) PT® Rabbit mAb

Catalog#: AM8551 | Size: 30μL/50μL/100μL

Main Information

Target	Host Species	Reactivity	Application	MW	Conjugated/Modification
Stat3	Rabbit	Human, Mouse, Rat	WB, IHC, IF, IP, ELISA	88kD (Calculated) 88kD (Observed)	Phospho

Detailed Information

Recommeded Dilution Ratio	IHC 1:200-1:1000; WB 1:2000-1:10000; IF 1:200-1:1000; ELISA 1:5000-1:20000; IP 1:50-1:200
Formulation	PBS, 50% glycerol, 0.05% Proclin 300, 0.05%BSA
Specificity	Phospho-Stat3 (Y705) protein detects endogenous levels of STAT3
Purification	Protein A
Storage	-15°C to -25°C/1 year(Do not lower than -25°C)
MW(Calculated)	88kD
MW(Observed)	88kD
Modification	Phospho
Clonality	Monoclonal
Clone Number	PT0742R
Isotype	IgG,Kappa

Antigen&Target Information

Specificity	Phospho-Stat3 (Y705) protein detects endogenous levels of STAT3
Gene Name	STAT3
Protein Name	STAT3
Other Name	STAT3

Database Link

Organism	Gene ID	SwissProt
Human	6774	P40763
Mouse	20848	P42227

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 family member (at least STAT1). Interacts with NCOA1, PELP1, SOCS7 and STATIP1. Interacts with HCV core protein. 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).

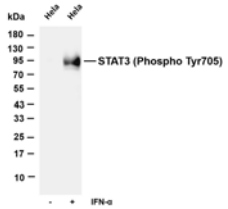
Research Areas

- 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

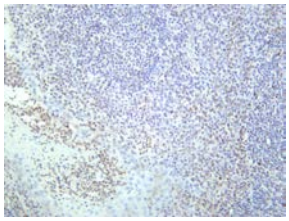
Signaling Pathway

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

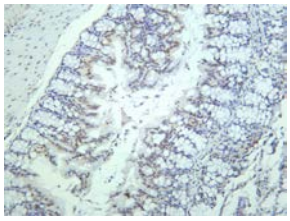
Validation Data



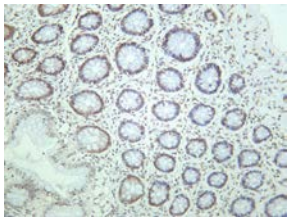
Various whole cell lysates were separated by 4-20% SDS-PAGE, and the membrane was blotted with anti-STAT3 (Phospho Tyr705) (PT0742R) antibody. The HRP-conjugated Goat anti-Rabbit IgG(H + L) antibody was used to detect the antibody. Lane 1: Hela Lane 2: Hela was starved of serum overnight and then treated with INF-α(100 ng/mL) for 5 minutes Predicted band size: 88kDa Observed band size: 88kDa



Human tonsil was stained with anti-STAT3 (Phospho Tyr705) rabbit antibody



Mouse colon was stained with anti-STAT3 (Phospho Tyr705) rabbit antibody



Human colon was stained with anti-STAT3 (Phospho Tyr705) rabbit antibody

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