



STAT3 protein

Catalog#: AD0101 | Size: 30μL/50μL/100μL

Main Information

Reactivity	Application
Human	WB, SDS-PAGE

Detailed Information

Formulation	Liquid in PBS
Purity	SDS-PAGE >90%
Storage	-20°C/6 month, -80°C for long storage

Antigen&Target Information

Sequence	Amino acid: 9-265, with his-MBP tag.
Gene Name	STAT3
Protein Name	STAT3 protein
Other Name	Signal transducer and activator of transcription 3 ;Acute-phase response factor ;

Database Link

Organism	Gene ID	SwissProt
Human	6774	P40763
Mouse		P42227

Background

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.

Function

negative regulation of transcription from RNA polymerase II promoter, eye development, temperature homeostasis, eye photoreceptor cell differentiation, acute inflammatory response, transcription, regulation of transcription, DNA-dependent, regulation of transcription from RNA polymerase II promoter, cell motion, defense response, acute-phase response, inflammatory response, cell surface receptor linked signal transduction, enzyme linked receptor protein signaling pathway, transmembrane receptor protein tyrosine kinase signaling pathway, intracellular signaling cascade, protein kinase cascade, JAK-STAT cascade, sensory organ development, behavior, feeding behavior, response to wounding, response to endogenous stimulus, response to hormone stimulus, negative regulation of biosynthetic process, positive regulation of biosynthetic process, response to organic substance, positive regulation of macromolecule biosynthetic process, negative regulation of macromolecule biosynthetic process, positive regulation of macromolecule metabolic process, negative regulation of macromolecule metabolic process, positive regulation of gene expression, negative regulation of gene expression, response to organic cyclic substance, negative regulation of transcription, cytokine-mediated signaling pathway, sexual reproduction, neuron differentiation, negative regulation of cellular biosynthetic process, positive regulation of cellular biosynthetic process, response to estradiol stimulus, cellular response to hormone stimulus, carbohydrate homeostasis, response to cytokine stimulus, regulation of growth, regulation of multicellular organism growth, response to drug, homeostatic process, glucose homeostasis, eating behavior, response to peptide hormone stimulus, response to estrogen stimulus, regulation of transcription, response to ethanol, negative regulation of transcription, DNA-dependent, positive regulation of transcription, DNA-dependent, negative regulation of nucleobase, nucleoside, nucleotide and nucleic acid metabolic process, positive regulation of nucleobase, nucleoside, nucleotide and nucleic acid metabolic process, positive regulation of transcription, positive regulation of transcription from RNA polymerase II promoter, photoreceptor cell differentiation, response to steroid hormone stimulus, eye morphogenesis, multicellular organismal homeostasis, chemical homeostasis, negative regulation of nitrogen compound metabolic process, positive regulation of nitrogen compound metabolic process, regulation of RNA metabolic process, negative regulation of RNA metabolic process, positive regulation of RNA metabolic process, growth hormone receptor signaling pathway, JAK-STAT cascade involved in growth hormone signaling pathway, response to growth hormone stimulus, interleukin-6-mediated signaling pathway.

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).

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

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