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STAT3 Antibody

Catalog # ASC11606

Product Information

Application	WB, IF, E, IHC-P
Primary Accession	P40763
Other Accession	NP_644805, 21618340
Reactivity	Human, Mouse, Rat
Host	Rabbit
Clonality	Polyclonal
Isotype	IgG
Calculated MW	88068
Concentration (mg/ml)	1 mg/mL
Conjugate	Unconjugated
Application Notes	STAT3 antibody can be used for detection of STAT3 by Western blot at 1 - 2 g/mL.

Additional Information

Gene ID	6774
Other Names	Signal transducer and activator of transcription 3, Acute-phase response factor, STAT3, APRF
Target/Specificity	STAT3;
Reconstitution & Storage	STAT3 antibody can be stored at 4℃ for three months and -20℃, stable for up to one year.
Precautions	STAT3 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	STAT3 {ECO:0000303|PubMed:9630560, ECO:0000312|HGNC:HGNC:11364}
Function	Signal transducer and transcription activator that mediates cellular responses to interleukins, KITLG/SCF, LEP and other growth factors (PubMed:10688651, PubMed:11294841, PubMed:12359225, PubMed:12873986, PubMed:15194700, PubMed:15653507, PubMed:16285960, PubMed:17344214, PubMed:18242580, PubMed:18782771, PubMed:22306293, PubMed:23084476, PubMed:28262505, PubMed:32929201, PubMed:38404237). Once activated, recruits coactivators, such as NCOA1 or MED1, to the promoter region of the target gene (PubMed:15653507, PubMed:16285960, PubMed:17344214, PubMed:18782771, PubMed:28262505, PubMed:32929201). May mediate cellular responses to activated FGFR1, FGFR2, FGFR3 and FGFR4 (PubMed:12873986). Upon activation of IL6ST/gp130 signaling by

	interleukin-6 (IL6), binds to the IL6-responsive elements identified in the promoters of various acute-phase protein genes (PubMed:12359225). Activated by IL31 through IL31RA (PubMed:15194700). Acts as a regulator of inflammatory response by regulating differentiation of naive CD4(+) T-cells into T-helper Th17 or regulatory T-cells (Treg): acetylation promotes its transcription activity and cell differentiation while deacetylation and oxidation of lysine residues by LOXL3 inhibits differentiation (PubMed:28065600, PubMed:28262505). Involved in cell cycle regulation by inducing the expression of key genes for the progression from G1 to S phase, such as CCND1 (PubMed:17344214). Mediates the effects of LEP on melanocortin production, body energy homeostasis and lactation (By similarity). May play an apoptotic role by transactivating BIRC5 expression under LEP activation (PubMed:18242580). Cytoplasmic STAT3 represses macroautophagy by inhibiting EIF2AK2/PKR activity (PubMed:23084476). Plays a crucial role in basal beta cell functions, such as regulation of insulin secretion (By similarity). Following JAK/STAT signaling activation and as part of a complex with NFATC3 and NFATC4, binds to the alpha-beta E4 promoter region of CRYAB and activates transcription in cardiomyocytes (By similarity). Involved in the oncostatin-M-mediated signaling pathway through both type I OSM receptor complex (heterodimers composed of LIFR and IL6ST) and type II OSM receptor complex (heterodimers composed of OSMR and IL6ST) (PubMed:9188471).
Cellular Location	Cytoplasm. Nucleus Note=Shuttles between the nucleus and the cytoplasm (PubMed:29162862) Translocated into the nucleus upon tyrosine phosphorylation and dimerization, in response to signaling by activated FGFR1, FGFR2, FGFR3 or FGFR4 (PubMed:15653507, PubMed:16285960). 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. Translocates to the nucleus in the presence of EDN1 (By similarity). {ECO:0000250|UniProtKB:P52631, ECO:0000269|PubMed:15653507, ECO:0000269|PubMed:16285960, ECO:0000269|PubMed:29162862}
Tissue Location	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)

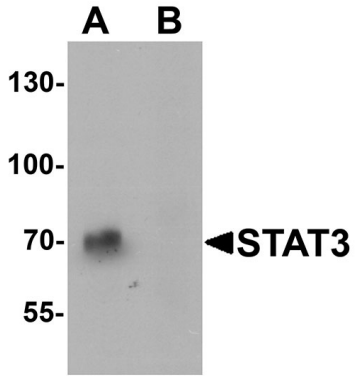
Background

STAT3 Antibody: STATs (signal transducers and activators of transcription) are a family of cytoplasmic latent transcription factors that are activated to regulate gene expression in response to a large number of extracellular signaling polypeptides including cytokines, interferons, and growth factors. After phosphorylation by JAK tyrosine kinases, STATs enter the nucleus to regulate transcription of many different genes. Among the seven STATs (STAT1, STAT2, STAT3, STAT4, STAT5a, STAT5b, and STAT6), STAT1, STAT3, STAT5a, and STAT5b have a wide activation profile. STAT3 signals are pivotal to the proliferation and differentiation of neural stem cells and also participate in neuronal regeneration and cancers of the nervous system.

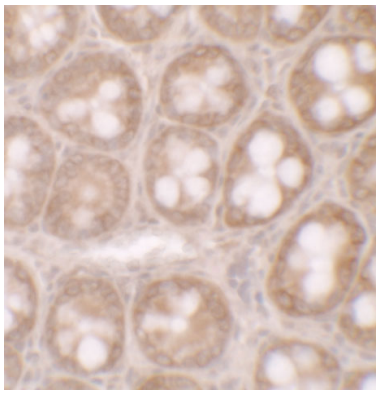
References

Schaefer TS, Sanders LK, and Nathans D. Cooperative transcriptional activity of Jun and Stat3b, a short form of Stat3. Proc. Natl. Acad. Sci. USA 1995; 92:9097-101.
Leonard WJ and O'Shea JJ. Jaks and STATs: biological implications. Annu. Rev. Immunol. 1998; 16:293-322.
Schindler C and Darnell JE Jr. Transcriptional responses to polypeptide ligands: the JAK-STAT pathway. Annu. Rev. Biochem. 1995; 64:621-51.

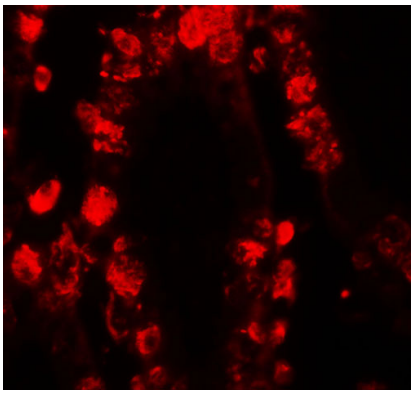
Images



Western blot analysis of STAT3 in human small intestine tissue lysate with STAT3 antibody at 1 µg/mL in (A) the absence and (B) the presence of blocking peptide.



Immunohistochemistry of STAT3 in human small intestine tissue with STAT3 antibody at 5 µg/ml.



Immunofluorescence of STAT3 in human small intestine tissue with STAT3 antibody at 20 µg/ml.

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.