

STAT3 Monoclonal Antibody (ST3-5G7)

Catalog Number13-7000

Product data sheet

Details		Species Reactivity	
Size	100 µg	Published species	Human, Mouse, Not Applicable
Host/Isotope	Mouse / IgG1	Tested Applications	
Class	Monoclonal	ChIP assay (ChIP)	Assay-dependent
Type	Antibody	ELISA (ELISA)	Assay-dependent
Clone	ST3-5G7	Gel Shift (GS)	Assay-dependent
Immunogen	A GST-fusion protein containing the unique carboxy terminal domain of the murine STAT3 protein.	Immunohistochemistry (Paraffin) (IHC (P))	1:20-1:500
Conjugate	Unconjugated	Immunoprecipitation (IP)	Assay-dependent
Form	Liquid	Western Blot (WB)	2 µg/mL
Concentration	0.5 mg/mL	Immunocytochemistry (ICC/IF)	1:250
Storage Conditions	-20°C	Published Applications	
		Immunohistochemistry (IHC)	See 1 publications below
		ChIP assay (ChIP)	See 3 publications below
		Western Blot (WB)	See 10 publications below
		ChIP-sequencing (ChIP-Seq)	See 1 publications below
		Gel Shift (GS)	See 4 publications below
		Immunoprecipitation (IP)	See 1 publications below
		Miscellaneous PubMed (Misc)	See 5 publications below
* Suggested working dilutions are given as a guide only. It is recommended that the user titrate the product for use in their own experiment using appropriate negative and positive controls.			

Background/Target Information

STAT3 belongs to the family of STAT (signal transducers and activators of transcription) proteins which are phosphorylated by receptor associated kinases, translocate to the nucleus, and act as transcription factors in response to cytokines and growth factors. Coactivators such as CREB-binding protein are required for the transcriptional activation by STAT3. STAT3 can also be activated by Interferon-alpha, Interferon-gamma, EGF, PDGF and IL6. Phosphorylation on tyrosine 705 by JAK1 and JAK2 is essential for STAT3 dimer formation, nuclear translocation, and DNA binding activity. In humans, the STAT3 gene is located on the q arm of chromosome 17. STAT3 has been shown to be activated by IFN-alpha but not IFN-beta. The transcription factors associated with STAT3 are c-Jun and cyclic AMP-responsive enhancer binding protein (CREB). STAT3 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 STAT3 while the PIAS3 protein is a specific inhibitor of STAT3. Three alternatively spliced transcript variants encoding distinct isoforms of STAT3 have been described. Deletion of the STAT3 gene in knock-out mice was lethal at the early embryonic stage.

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PubMed References For STAT3 Monoclonal Antibody (ST3-5G7)

1 Immunohistochemistry References

Species / Dilution	Summary
	13-7000 was used in Immunohistochemistry-immunofluorescence to document the autophagy response in human neonatal skin organ culture after infection with varicella-zoster virus.
Human / Not Cited	Frontiers in microbiology (2020; 9:) "Autophagy Quantification and STAT3 Expression in a Human Skin Organ Culture Model for Innate Immunity to Herpes Zoster." Author(s):Buckingham EM,Girsch J,Jackson W,Cohen JI,Grose C PubMed Article URL: http://dx.doi.org/10.3389/fmicb.2018.02935

3 ChIP assay References

Species / Dilution	Summary
	Published figure using STAT3 monoclonal antibody (Product # 13-7000) in ChIP assay
Not Applicable / Not Cited	Nature communications (2015; 6:) "IL-21-mediated non-canonical pathway for IL-1 production in conventional dendritic cells." Author(s):Wan CK,Li P,Spolski R,Oh J,Andraski AB,Du N,Yu ZX,Dillon CP,Green DR,Leonard WJ PubMed Article URL: http://dx.doi.org/10.1038/ncomms8988
	Published figure using STAT3 monoclonal antibody (Product # 13-7000) in Western Blot
Not Applicable / Not Cited	Proceedings of the National Academy of Sciences of the United States of America (2015; 112: 9394) "Opposing roles of STAT1 and STAT3 in IL-21 function in CD4+ T cells." Author(s):Wan CK,Andraski AB,Spolski R,Li P,Kazemian M,Oh J,Samsel L,Swanson PA,McGavern DB,Sampaio EP, Freeman AF,Milner JD,Holland SM,Leonard WJ PubMed Article URL: http://dx.doi.org/10.1073/pnas.1511711112
	Published figure using STAT3 monoclonal antibody (Product # 13-7000) in ChIP assay
Not Applicable / Not Cited	Immunity (2013; 38: 514) "The cytokines IL-21 and GM-CSF have opposing regulatory roles in the apoptosis of conventional dendritic cells." Author(s):Wan CK,Oh J,Li P,West EE,Wong EA,Andraski AB,Spolski R,Yu ZX,He J,Kelsall BL,Leonard WJ PubMed Article URL: http://dx.doi.org/10.1016/j.immuni.2013.02.011

10 Western Blot References

Species / Dilution	Summary
	13-7000 was used in western blot to identify pathways that are constitutively activated in a KIT-dependent manner in gastrointestinal stromal tumors
Not Applicable / Not Cited	Oncogene (2004; 23: 3999) "Mechanisms of oncogenic KIT signal transduction in primary gastrointestinal stromal tumors (GISTs)." Author(s):Duensing A,Medeiros F,McConarty B,Joseph NE,Panigrahy D,Singer S,Fletcher CD,Demetri GD,Fletcher JA PubMed Article URL: http://dx.doi.org/10.1038/sj.onc.1207525
	Published figure using STAT3 monoclonal antibody (Product # 13-7000) in Western Blot
Not Applicable / Not Cited	Proceedings of the National Academy of Sciences of the United States of America (2015; 112: 9394) "Opposing roles of STAT1 and STAT3 in IL-21 function in CD4+ T cells." Author(s):Wan CK,Andraski AB,Spolski R,Li P,Kazemian M,Oh J,Samsel L,Swanson PA,McGavern DB,Sampaio EP, Freeman AF,Milner JD,Holland SM,Leonard WJ PubMed Article URL: http://dx.doi.org/10.1073/pnas.1511711112
	13-7000 was used in western blot to analyze the dependence on signal transducer and activator of transcription 3 of malignant transformation but not normal cell growth
Not Applicable / Not Cited	Cancer research (2005; 65: 5828) "Malignant transformation but not normal cell growth depends on signal transducer and activator of transcription 3." Author(s):Schlessinger K,Levy DE PubMed Article URL: http://dx.doi.org/10.1158/0008-5472.CAN-05-0317
	Published figure using STAT3 monoclonal antibody (Product # 13-7000) in Western Blot
Mouse / Not Cited	Cell death and differentiation (2014; 21: 234) "Dysregulated STAT1-SOCS1 control of JAK2 promotes mammary luminal progenitor cell survival and drives ER (+) tumorigenesis." Author(s):Chan SR,Rickert CG,Vermi W,Sheehan KC,Arthur C,Allen JA,White JM,Archambault J,Lonardi S,McDevitt TM, Bhattacharya D,Lorenzi MV,Allred DC,Schreiber RD PubMed Article URL: http://dx.doi.org/10.1038/cdd.2013.116

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	Published figure using STAT3 monoclonal antibody (Product # 13-7000) in Western Blot
Not Applicable / Not Cited	Journal of leukocyte biology (2006; 79: 1328) "HIV regulation of the IL-7R: a viral mechanism for enhancing HIV-1 replication in human macrophages in vitro." Author(s):Zhang M,Drenkow J,Lankford CS,Frucht DM,Rabin RL,Gingeras TR,Venkateshan C,Schwartzkopff F,Clouse KA,Dayton AI PubMed Article URL: http://dx.doi.org/10.1189/jlb.0704424
	13-7000 was used in western blot to evaluate the clinical efficacy of imatinib in patients with advanced aggressive fibromatosis and investigate the mechanism
Not Applicable / Not Cited	Journal of clinical oncology : official journal of the American Society of Clinical Oncology (2006; 24: 1195) "Clinical and molecular studies of the effect of imatinib on advanced aggressive fibromatosis (desmoid tumor)." Author(s):Heinrich MC,McArthur GA,Demetri GD,Joensuu H,Bono P,Herrmann R,Hirte H,Cresta S,Koslin DB,Corless CL,Dirnhofer S,van Oosterom AT,Nikolova Z,Dimitrijevic S,Fletcher JA PubMed Article URL: http://dx.doi.org/10.1200/JCO.2005.04.0717
	13-7000 was used in western blot to examine the consequences of constitutive expression of anaplastic lymphoma kinase
Not Applicable / Not Cited	Blood (2006; 107: 689) "Ablation of oncogenic ALK is a viable therapeutic approach for anaplastic large-cell lymphomas." Author(s):Piva R,Chiarle R,Manazza AD,Taulli R,Simmons W,Ambrogio C,D'Escamard V,Pellegrino E,Ponzetto C,Palestro G,Inghirami G PubMed Article URL: http://dx.doi.org/10.1182/blood-2005-05-2125
	13-7000 was used in western blot to investigate microRNA expression during plasma cell differentiation.
Human / Not Cited	Journal of immunology (Baltimore, Md. : 1950) (2012; 189: 253) "BLIMP-1 and STAT3 counterregulate microRNA-21 during plasma cell differentiation." Author(s):Barnes NA,Stephenson S,Cocco M,Tooze RM,Doddy GM PubMed Article URL: http://dx.doi.org/10.4049/jimmunol.1101563
	13-7000 was used in ChIP assay and western blot to elucidate how Stat3 and AKT provide survival signals for glioblastoma multiforme cells
Not Applicable / Not Cited	Oncogene (2005; 24: 7290) "PI3K-AKT pathway negatively controls EGFR-dependent DNA-binding activity of Stat3 in glioblastoma multiforme cells." Author(s):Ghosh MK,Sharma P,Harbor PC,Rahaman SO,Haque SJ PubMed Article URL: http://dx.doi.org/10.1038/sj.onc.1208894
	13-7000 was used in EMSA, immunoprecipitation, and western blot to examine the effect of STAT3 modulation using embryonic stem cells.
Mouse / Not Cited	Proceedings of the National Academy of Sciences of the United States of America (1999; 96: 2846) "Essential role of STAT3 for embryonic stem cell pluripotency." Author(s):Raz R,Lee CK,Cannizzaro LA,d'Eustachio P,Levy DE PubMed Article URL: http://dx.doi.org/10.1073/pnas.96.6.2846
1 ChIP-sequencing References	
Species / Dilution	Summary
	Published figure using STAT3 monoclonal antibody (Product # 13-7000) in ChIP assay
Not Applicable / Not Cited	Nature communications (2015; 6:) "IL-21-mediated non-canonical pathway for IL-1 production in conventional dendritic cells." Author(s):Wan CK,Li P,Spolski R,Oh J,Andraski AB,Du N,Yu ZX,Dillon CP,Green DR,Leonard WJ PubMed Article URL: http://dx.doi.org/10.1038/ncomms8988
4 Gel Shift References	
Species / Dilution	Summary
	13-7000 was used in EMSA to test if Src family kinases regulate granulocyte colony-stimulating factor receptor signaling
Not Applicable / Not Cited	Blood (2006; 108: 2562) "Src family kinases are important negative regulators of G-CSF-dependent granulopoiesis." Author(s):Mermel CH,McLemore ML,Liu F,Pereira S,Woloszynek J,Lowell CA,Link DC PubMed Article URL: http://dx.doi.org/10.1182/blood-2006-05-024307
	Published figure using STAT3 monoclonal antibody (Product # 13-7000) in Gel Shift
Not Applicable / Not Cited	The Journal of biological chemistry (1999; 274: 25855) "Distinct roles for STAT1, STAT3, and STAT5 in differentiation gene induction and apoptosis inhibition by interleukin-9." Author(s):Demoulin JB,Van Roost E,Stevens M,Groner B,Renaud JC PubMed Article URL: http://dx.doi.org/10.1074/jbc.274.36.25855

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Published figure using STAT3 monoclonal antibody (Product # 13-7000) in Western Blot	
Human / 1 µg	<p>Cell death and differentiation (2014; 21: 234) "Dysregulated STAT1-SOCS1 control of JAK2 promotes mammary luminal progenitor cell survival and drives ER (+) tumorigenesis." Author(s):Chan SR,Rickert CG,Vermi W,Sheehan KC,Arthur C,Allen JA,White JM,Archambault J,Lonardi S,McDevitt TM,Bhattacharya D,Lorenzi MV,Allred DC,Schreiber RD PubMed Article URL:http://dx.doi.org/10.1038/cdd.2013.116</p>
Mouse / Not Cited	<p>13-7000 was used in EMSA, immunoprecipitation, and western blot to examine the effect of STAT3 modulation using embryonic stem cells.</p> <p>Proceedings of the National Academy of Sciences of the United States of America (1999; 96: 2846) "Essential role of STAT3 for embryonic stem cell pluripotency." Author(s):Raz R,Lee CK,Cannizzaro LA,d'Eustachio P,Levy DE PubMed Article URL:http://dx.doi.org/10.1073/pnas.96.6.2846</p>
1 Immunoprecipitation References	
Species / Dilution	Summary
Not Applicable / Not Cited	<p>13-7000 was used in immunocytochemistry, immunohistochemistry - paraffin section, immunoprecipitation, and western blot to study the localization in focal adhesions and function in ovarian cancer cell motility of activated signal transducer and activator</p> <p>Cancer research (2004; 64: 3550) "Activated signal transducer and activator of transcription (STAT) 3: localization in focal adhesions and function in ovarian cancer cell motility." Author(s):Silver DL,Naora H,Liu J,Cheng W,Montell DJ PubMed Article URL:http://dx.doi.org/10.1158/0008-5472.CAN-03-3959</p>
5 Miscellaneous PubMed References	
Species / Dilution	Summary
Human / Not Cited	<p>13-7000 was used in western blot to elucidate ErbB-2/Her2/Neu signaling in the development of non-small-cell lung cancer.</p> <p>International journal of cancer (1999; 83: 564) "ErbB-2 kinase is required for constitutive stat 3 activation in malignant human lung epithelial cells." Author(s):Fernandes A,Hamburger AW,Gerwin BI PubMed Article URL:<a href="http://dx.doi.org/10.1002/(sici)1097-0215(19991112)83:4<564::aid-ijc20>3.0.co;2-q">http://dx.doi.org/10.1002/(sici)1097-0215(19991112)83:4<564::aid-ijc20>3.0.co;2-q</p>
Human / Not Cited	<p>13-7000 was used in immunoprecipitation to investigate signaling pathways in posttransplant lymphoproliferative disease.</p> <p>Transplantation (2002; 74: 396) "Constitutive activation of Jak/STAT proteins in Epstein-Barr virus-infected B-cell lines from patients with posttransplant lymphoproliferative disorder." Author(s):Nepomuceno RR,Snow AL,Robert Beatty P,Krams SM,Martinez OM PubMed Article URL:http://dx.doi.org/10.1097/00007890-200208150-00017</p>
Mouse / Not Cited	<p>Published figure using STAT3 monoclonal antibody (Product # 13-7000) in Gel Shift</p> <p>The Journal of biological chemistry (1999; 274: 25855) "Distinct roles for STAT1, STAT3, and STAT5 in differentiation gene induction and apoptosis inhibition by interleukin-9." Author(s):Demoulin JB, Van Roost E,Stevens M,Groner B,Renaud JC PubMed Article URL:http://dx.doi.org/10.1074/jbc.274.36.25855</p>
Human / Not Cited	<p>13-7000 was used in gel shift to clone and study human IL-TIF.</p> <p>Proceedings of the National Academy of Sciences of the United States of America (2000; 97: 10144) "Human interleukin-10-related T cell-derived inducible factor: molecular cloning and functional characterization as an hepatocyte-stimulating factor." Author(s):Dumoutier L, Van Roost E,Colau D,Renaud JC PubMed Article URL:http://dx.doi.org/10.1073/pnas.170291697</p>
Mouse / Not Cited	<p>13-7000 was used in gel shift to identify genes induced in T cells by IL-9 treatment.</p> <p>Journal of immunology (Baltimore, Md. : 1950) (2000; 164: 1814) "Cloning and characterization of IL-10-related T cell-derived inducible factor (IL-TIF), a novel cytokine structurally related to IL-10 and inducible by IL-9." Author(s):Dumoutier L,Louahed J,Renaud JC PubMed Article URL:http://dx.doi.org/10.4049/jimmunol.164.4.1814</p>

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