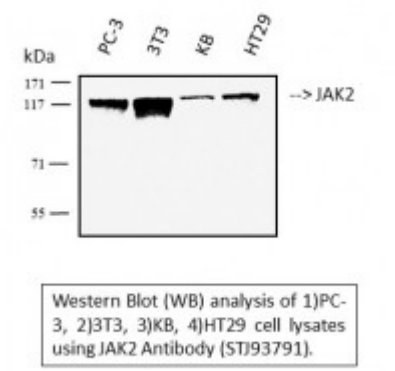
Anti-JAK2 antibody



Western Blot (WB) analysis of 1)PC-3, 2)3T3, 3)KB, 4)HT29 cell lysates using JAK2 Antibody (STJ93791).

Description	JAK2 is a protein encoded by the JAK2 gene which is approximately 130,6 kDa. JAK2 is localised to the endomembrane system. It is involved in RET signalling, prolactin signalling pathway, the IL-2 pathway and Th17 cell differentiation. It is a non-receptor tyrosine kinase involved in various processes such as cell growth, development, differentiation and histone modifications. It mediates essential signalling events in both innate and adaptive immunity. JAK2 is ubiquitously expressed throughout most tissues in the body. Mutations in the JAK2 gene may result in Budd-Chiari syndrome and polycythemia vera. STJ93789 was affinity-purified from rabbit antiserum by affinity-chromatography using epitope-specific immunogen. This polyclonal antibody detects endogenous levels of JAK2 protein.

Model	STJ93791
Host	Rabbit
Reactivity	Human, Mouse, Rat
Applications	ELISA, IHC, WB
Immunogen	Synthesized peptide derived from human JAK2 around the non-phosphorylation site of Y1007.
Immunogen Region	950-1030 aa
Gene ID	3717
Gene Symbol	JAK2
Dilution range	WB 1:500-1:2000IHC 1:100-1:300ELISA 1:10000
Specificity	JAK2 Polyclonal Antibody detects endogenous levels of JAK2 protein.

Tissue Specificity	Ubiquitously expressed throughout most tissues.
Purification	The antibody was affinity-purified from rabbit antiserum by affinity-chromatography using epitope-specific immunogen.
Note	For Research Use Only (RUO).
Protein Name	Tyrosine-protein kinase JAK2 Janus kinase 2 JAK-2
Molecular Weight	130 kDa
Clonality	Polyclonal
Conjugation	Unconjugated
Isotype	IgG
Formulation	Liquid in PBS containing 50% glycerol, 0.5% BSA and 0.02% sodium azide.
Concentration	1 mg/ml
Storage Instruction	Store at -20°C, and avoid repeat freeze-thaw cycles.
Database Links	HGNC:6192OMIM:147796
Alternative Names	Tyrosine-protein kinase JAK2 Janus kinase 2 JAK-2
Function	Non-receptor tyrosine kinase involved in various processes such as cell growth, development, differentiation or histone modifications. Mediates essential signaling events in both innate and adaptive immunity. In the cytoplasm, plays a pivotal role in signal transduction via its association with type I receptors such as growth hormone (GHR), prolactin (PRLR), leptin (LEPR), erythropoietin (EPOR), thrombopoietin (THPO); or type II receptors including IFN-alpha, IFN-beta, IFN-gamma and multiple interleukins . Following ligand-binding to cell surface receptors, phosphorylates specific tyrosine residues on the cytoplasmic tails of the receptor, creating docking sites for STATs proteins . Subsequently, phosphorylates the STATs proteins once they are recruited to the receptor. Phosphorylated STATs then form homodimer or heterodimers and translocate to the nucleus to activate gene transcription. For example, cell stimulation with erythropoietin (EPO) during erythropoiesis leads to JAK2 autophosphorylation, activation, and its association with erythropoietin receptor (EPOR) that becomes phosphorylated in its cytoplasmic domain. Then, STAT5 (STAT5A or STAT5B) is recruited, phosphorylated and activated by JAK2. Once activated, dimerized STAT5 translocates into the nucleus and promotes the transcription of several essential genes involved in the modulation of erythropoiesis. In addition, JAK2 mediates angiotensin-2-induced ARHGEF1 phosphorylation . Plays a role in cell cycle by phosphorylating CDKN1B . Cooperates with TEC through reciprocal phosphorylation to mediate cytokine-driven activation of FOS transcription. In the nucleus, plays a key role in chromatin by specifically mediating phosphorylation of 'Tyr-41' of histone H3 (H3Y41ph), a specific tag that promotes exclusion of CBX5 (HP1 alpha) from chromatin .
Sequence and Domain Family	Possesses 2 protein kinase domains. The second one probably contains the catalytic domain, while the presence of slight differences suggest a different role for protein kinase 1 .
Cellular Localization	Endomembrane system Cytoplasm Nucleus
Post-translational	Autophosphorylated, leading to regulate its activity. Leptin promotes

Modifications	phosphorylation on tyrosine residues, including phosphorylation on Tyr-813 . Autophosphorylation on Tyr-119 in response to EPO down-regulates its kinase activity . Autophosphorylation on Tyr-868, Tyr-966 and Tyr-972 in response to growth hormone (GH) are required for maximal kinase activity . Also phosphorylated by TEC . Phosphorylated on tyrosine residues in response to interferon gamma signaling .