

# JAK2 Antibody

Purified Mouse Monoclonal Antibody

Catalog # AO1394a

## Product Information

---

<b>Application</b>	WB, E
<b>Primary Accession</b>	<a href="#">O60674</a>
<b>Reactivity</b>	Human
<b>Host</b>	Mouse
<b>Clonality</b>	Monoclonal
<b>Clone Names</b>	1C1
<b>Isotype</b>	IgG1
<b>Calculated MW</b>	130674
<b>Description</b>	This gene product is a protein tyrosine kinase involved in a specific subset of cytokine receptor signaling pathways. It has been found to be constitutively associated with the prolactin receptor and is required for responses to gamma interferon. Mice that do not express an active protein for this gene exhibit embryonic lethality associated with the absence of definitive erythropoiesis.
<b>Immunogen</b>	Purified recombinant fragment of JAK2(745-955aa) expressed in E. Coli.
<b>Formulation</b>	Ascitic fluid containing 0.03% sodium azide.

## Additional Information

---

<b>Gene ID</b>	3717
<b>Other Names</b>	Tyrosine-protein kinase JAK2, 2.7.10.2, Janus kinase 2, JAK-2, JAK2
<b>Dilution</b>	WB~~1/500 - 1/2000 E~~N/A
<b>Storage</b>	Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.
<b>Precautions</b>	JAK2 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

## Protein Information

---

<b>Name</b>	JAK2 ( <a href="#">HGNC:6192</a> )
<b>Function</b>	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 receptor (MPL/TPOR); or type II receptors including IFN- alpha, IFN-beta, IFN-gamma and multiple interleukins (PubMed:[15690087](#), PubMed:[7615558](#), PubMed:[9657743](#), PubMed:[15899890](#)). Following ligand- binding to cell surface receptors, phosphorylates specific tyrosine residues on the cytoplasmic tails of the receptor, creating docking sites for STATs proteins (PubMed:[15690087](#), PubMed:[9618263](#)). 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 (PubMed:[9657743](#)). 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. Part of a signaling cascade that is activated by increased cellular retinol and that leads to the activation of STAT5 (STAT5A or STAT5B) (PubMed:[21368206](#)). In addition, JAK2 mediates angiotensin-2-induced ARHGEF1 phosphorylation (PubMed:[20098430](#)). Plays a role in cell cycle by phosphorylating CDKN1B (PubMed:[21423214](#)). 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 (PubMed:[19783980](#)). Up-regulates the potassium voltage- gated channel activity of KCNA3 (PubMed:[25644777](#)).

#### Cellular Location

Endomembrane system; Peripheral membrane protein. Cytoplasm. Nucleus

#### Tissue Location

Ubiquitously expressed throughout most tissues.

## References

1. Mol Cell Endocrinol. 1997 May 16;129(2):199-208. 2. J Immunol. 1999 Dec 15;163(12):6651-8. 3. J Biol Chem. 1999 Oct 29;274(44):31531-42.

## Images

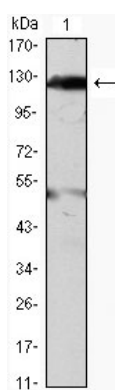


Figure 1: Western blot analysis using JAK2 mouse mAb against THP-1(1) cell lysate.