

Anti-JAK2 Monoclonal Antibody
Catalog # ABO14362**Specification****Anti-JAK2 Monoclonal Antibody - Product Information**

Application	WB, IHC, IF, ICC, IP
Primary Accession	O60674
Host	Rabbit
Isotype	Rabbit IgG
Reactivity	Rat, Human, Mouse
Clonality	Monoclonal
Format	Liquid

Description

Anti-JAK2 Monoclonal Antibody . Tested in WB, IHC, ICC/IF, IP applications. This antibody reacts with Human, Mouse, Rat.

Anti-JAK2 Monoclonal Antibody - Additional Information

Gene ID 3717

Other Names

Tyrosine-protein kinase JAK2, 2.7.10.2, Janus kinase 2, JAK-2, JAK2 (http://www.genenames.org/cgi-bin/gene_symbol_report?hgnc_id=6192)
HGNC:6192

Calculated MW

131 kDa KDa

Application Details

WB 1:500-1:2000
IHC 1:50-1:200
ICC/IF 1:50-1:200
IP 1:50-100

Contents

Rabbit IgG in phosphate buffered saline, pH 7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol, 0.4-0.5mg/ml BSA.

Immunogen

A synthesized peptide derived from human JAK2 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.

Purification

Affinity-chromatography

Storage

Store at -20°C for one year. For short term storage and frequent use, store at 4°C for up to one month. Avoid repeated

freeze-thaw cycles.

Anti-JAK2 Monoclonal Antibody - Protein Information

Name JAK2 ([HGNC:6192](#))

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 receptor (MPL/TPOR); or type II receptors including IFN-alpha, IFN-beta, IFN-gamma and multiple interleukins (PubMed:[15690087](http://www.uniprot.org/citations/15690087)), PubMed:[7615558](http://www.uniprot.org/citations/7615558)), PubMed:[9657743](http://www.uniprot.org/citations/9657743)), PubMed:[15899890](http://www.uniprot.org/citations/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](http://www.uniprot.org/citations/15690087)), PubMed:[9618263](http://www.uniprot.org/citations/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](http://www.uniprot.org/citations/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](http://www.uniprot.org/citations/21368206)). In addition, JAK2 mediates angiotensin-2-induced ARHGEF1 phosphorylation (PubMed:[20098430](http://www.uniprot.org/citations/20098430)). Plays a role in cell cycle by phosphorylating CDKN1B (PubMed:[21423214](http://www.uniprot.org/citations/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](http://www.uniprot.org/citations/19783980)). Up-regulates the potassium voltage-gated channel activity of KCNA3 (PubMed:[25644777](http://www.uniprot.org/citations/25644777)).

Cellular Location

Endomembrane system; Peripheral membrane protein. Cytoplasm. Nucleus

Tissue Location

Ubiquitously expressed throughout most tissues.

Anti-JAK2 Monoclonal Antibody - Protocols

Provided below are standard protocols that you may find useful for product applications.

- [Western Blot](#)
- [Blocking Peptides](#)
- [Dot Blot](#)
- [Immunohistochemistry](#)
- [Immunofluorescence](#)
- [Immunoprecipitation](#)
- [Flow Cytometry](#)
- [Cell Culture](#)

Anti-JAK2 Monoclonal Antibody - Images

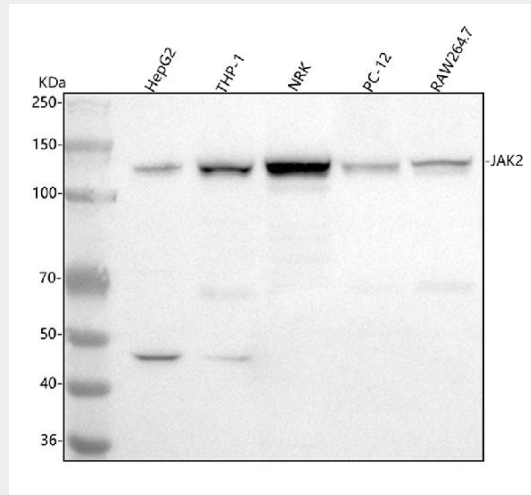


Figure 1. Western blot analysis of JAK2 using anti-JAK2 antibody (M00027).

Electrophoresis was performed on a 5-20% SDS-PAGE gel at 70V (Stacking gel) / 90V (Resolving gel) for 2-3 hours. The sample well of each lane was loaded with 30 ug of sample under reducing conditions.

Lane 1: human HepG2 whole cell lysates,

Lane 2: human THP-1 whole cell lysates,

Lane 3: rat NRK whole cell lysates,

Lane 4: rat PC-12 whole cell lysates,

Lane 5: mouse RAW264.7 whole cell lysates.

After electrophoresis, proteins were transferred to a nitrocellulose membrane at 150 mA for 50-90 minutes. Blocked the membrane with 5% non-fat milk/TBS for 1.5 hour at RT. The membrane was incubated with rabbit anti-JAK2 antigen affinity purified monoclonal antibody (Catalog # M00027) at 1:500 overnight at 4°C, then washed with TBS-0.1%Tween 3 times with 5 minutes each and probed with a goat anti-rabbit IgG-HRP secondary antibody at a dilution of 1:1000 for 1.5 hour at RT. The signal is developed using an Enhanced Chemiluminescent detection (ECL) kit (Catalog # EK1002) with Tanon 5200 system. A specific band was detected for JAK2 at approximately 131 kDa. The expected band size for JAK2 is at 131 kDa.

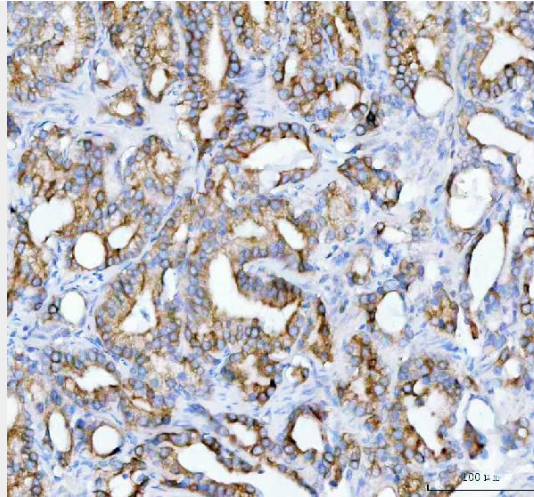


Figure 2. IHC analysis of JAK2 using anti-JAK2 antibody (M00027).

JAK2 was detected in a paraffin-embedded section of human prostate cancer tissue. Heat mediated antigen retrieval was performed in EDTA buffer (pH 8.0, epitope retrieval solution). The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 1:50 rabbit anti-JAK2 Antibody (M00027) overnight at 4°C. Peroxidase Conjugated Goat Anti-rabbit IgG was used as secondary antibody and incubated for 30 minutes at 37°C. The tissue section was developed using HRP Conjugated Rabbit IgG Super Vision Assay Kit (Catalog # SV0002) with DAB as the chromogen.

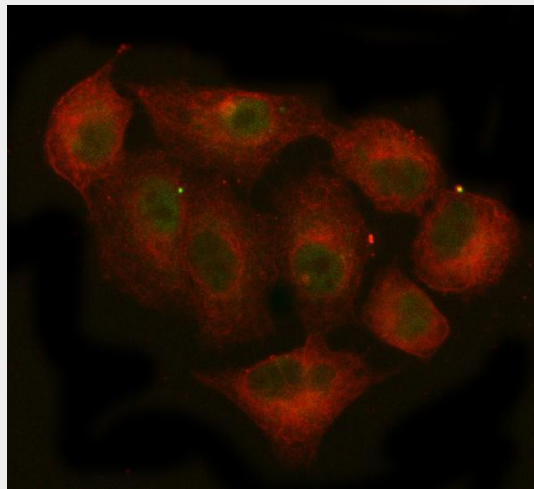


Figure 3. IF analysis of JAK2 using anti-JAK2 antibody (M00027) and anti-Beta Tubulin antibody (M01857-3).

JAK2 was detected in immunocytochemical section of A549 cell. Enzyme antigen retrieval was performed using IHC enzyme antigen retrieval reagent (AR0022) for 15 mins. The cells were blocked with 10% goat serum. And then incubated at 1:50 with rabbit anti-JAK2 Antibody (M00027) and mouse anti-Beta Tubulin antibody (M01857-3) overnight at 4°C. DyLight@488 Conjugated Goat Anti-Rabbit IgG (BA1127) and Cy3 Conjugated Goat Anti-Mouse IgG (BA1031) were used as secondary antibody at 1:500 dilution and incubated for 30 minutes at 37°C. Visualize using a fluorescence microscope and filter sets appropriate for the label used.