

Anti-JAK2 Antibody

Catalog # ABO10943

Specification

Anti-JAK2 Antibody - Product Information

ApplicationWB, IHC-PPrimary AccessionO60674HostRabbitReactivityHumanClonalityPolyclonalFormatLyophilizedDescriptionRabbit IgG polyclonal antibody for Tyrosine-protein kinase JAK2(JAK2) detection. Tested with WB, IHC-P in Human.

Reconstitution Add 0.2ml of distilled water will yield a concentration of 500ug/ml.

Anti-JAK2 Antibody - Additional Information

Gene ID 3717

Other Names Tyrosine-protein kinase JAK2, 2.7.10.2, Janus kinase 2, JAK-2, JAK2

Calculated MW 130674 MW KDa

Application Details Immunohistochemistry(Paraffin-embedded Section), 0.5-1 μg/ml, Human, By Heat
Western blot, 0.1-0.5 μg/ml, Human

Subcellular Localization Endomembrane system ; Peripheral membrane protein . Cytoplasm . Nucleus .

Tissue Specificity Ubiquitously expressed throughout most tissues. .

Protein Name Tyrosine-protein kinase JAK2

Contents Each vial contains 5mg BSA, 0.9mg NaCl, 0.2mg Na2HPO4, 0.05mg Thimerosal, 0.05mg NaN3.

Immunogen A synthetic peptide corresponding to a sequence at the C-terminus of human JAK2(1096-1113aa DEIYMIMTECWNNNVNQR).

Purification



Immunogen affinity purified.

Cross Reactivity No cross reactivity with other proteins

Storage

At -20°C for one year. After r°Constitution, at 4°C for one month. It°Can also be aliquotted and stored frozen at -20°C for a longer time.Avoid repeated freezing and thawing.

Sequence Similarities

Belongs to the protein kinase superfamily. Tyr protein kinase family. JAK subfamily.

Anti-JAK2 Antibody - Protein Information

Name JAK2 (<u>HGNC:6192</u>)

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, 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: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 autophosphorylated 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:<a href="http://www.uniprot.org/citations/19783980"
target="_blank">19783980). Up-regulates the potassium voltage- gated channel activity of
KCNA3 (PubMed:<a href="http://www.uniprot.org/citations/25644777"
target="_blank">25644777).



Cellular Location

Endomembrane system; Peripheral membrane protein. Cytoplasm. Nucleus

Tissue Location

Ubiquitously expressed throughout most tissues.

Anti-JAK2 Antibody - Protocols

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

- <u>Western Blot</u>
- Blocking Peptides
- Dot Blot
- Immunohistochemistry
- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety
- <u>Cell Culture</u>

Anti-JAK2 Antibody - Images

250KD -130KD -100KD -70KD -55KD -35KD -

Anti- JAK2 antibody, ABO10943, Western blottingAll lanes: Anti JAK2 (ABO10943) at 0.5ug/mlWB: HELA Whole Cell Lysate at 40ugPredicted bind size: 130KDObserved bind size: 130KD



Anti- JAK2 antibody, ABO10943, IHC(P)IHC(P): Human Tonsil Tissue





Anti- JAK2 antibody, ABO10943, IHC(P)IHC(P): Human Intestinal Cancer Tissue

Anti-JAK2 Antibody - Background

Janus kinase 2, commanly called JAK2, is a human protein that has been implicated in signaling by members of the type II cytokine receptor family, the GM-CSF receptor family, the gp130 receptor family, and the single chain receptors. Exactly, JAK2 kinase is a member of a family of tyrosine kinases involved in cytokine receptor signaling. The JAK2 gene is mapped to 9p24.1. The JAK2 gene encodes a 1,132-amino acid protein that shares 95% sequence similarity to rat and pig Jak2. JAK2 is constitutively associated with the prolactin receptor and that it is activated and tyrosine phosphorylated upon PRL binding to the PRL receptor. JAK2, and more specifically just its intact N-terminal domain, binds to EPOR in the endoplasmic reticulum and promotes its cell surface expression. The human JAK2 is present in the nucleus of hematopoietic cells and directly phosphorylates tyr41 on histone H3.