10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.875.1999

JAK2 Antibody (C-term) Blocking Peptide

Synthetic peptide
Catalog # BP1125b

Specification

JAK2 Antibody (C-term) Blocking Peptide - Product Information

Primary Accession O60674

JAK2 Antibody (C-term) Blocking Peptide - Additional Information

Gene ID 3717

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

Target/Specificity
The synthetic peptide sequence used to generate the antibody AP1125b was selected from the C-terminal region of human JAK2. A 10 to 100 fold molar excess to antibody is recommended. Precise conditions should be optimized for a particular assay.

Format
Peptides are lyophilized in a solid powder format. Peptides can be reconstituted in solution using the appropriate buffer as needed.

Storage
Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C.

Precautions
This product is for research use only. Not for use in diagnostic or therapeutic procedures.

JAK2 Antibody (C-term) Blocking Peptide - 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 (THPO); or type II receptors including IFN-alpha, IFN- beta, IFN-gamma and multiple interleukins (PubMed:7615558). 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: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. 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).

Cellular Location
Endomembrane system; Peripheral membrane protein. Cytoplasm. Nucleus

Tissue Location
Ubiquitously expressed throughout most tissues.

JAK2 Antibody (C-term) Blocking Peptide - Protocols

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

- Blocking Peptides

JAK2 Antibody (C-term) Blocking Peptide - Images

JAK2 Antibody (C-term) Blocking Peptide - Background

This gene product is a protein tyrosine kinase involved in a specific subset of cytokine receptor signaling pathways. It has been found to be constituitively 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.

JAK2 Antibody (C-term) Blocking Peptide - References

Joos, S., et al., Int. J. Cancer 103(4):489-495 (2003).Leung, K.C., et al., Proc. Natl. Acad. Sci. U.S.A. 100(3):1016-1021 (2003).Saharinen, P., et al., J. Biol. Chem. 277(49):47954-47963 (2002).Giordanetto, F., et al., Protein Eng. 15(9):727-737 (2002).Deo, D.D., et al., J. Biol. Chem. 277(24):21237-21245 (2002).