abcam

ab200340

Alexa Fluor® 647 Anti-JAK2 (phospho Y1007 + Y1008) + JAK1 (phospho Y1034 + Y1035) antibody [E132]

Rabbit Recombinant Monoclonal JAK2 phospho Y1007 + Y1008 and JAK1 phospho Y1034 + Y1035 antibody - conjugated to Alexa Fluor® 647. Suitable for ICC/IF, Flow Cyt (Intra) and reacts with Human samples.

Recombinant | RabMAb

Key facts

Isotype	IgG
Host species	Rabbit
Conjugation	Alexa Fluor® 647
Excitation/Emission	Ex: 650nm, Em: 665nm
Storage buffer	pH: 7.4 Preservative: 0.02% Sodium azide Constituents: PBS, 30% Glycerol (glycerin, glycerine), 1% BSA
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Clone number	E132
Purification technique	Affinity purification Protein A
Specificity	Stimulation may be required to allow detection of the phosphorylated protein. Please see images below for recommended treatment conditions and positive controls.
Concentration	0.5 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

ICC/IF

Tested

Species	Human
Dilution info	1/100
Notes	-

Expected

Species	Mouse, Rat
Dilution info	Use at an assay dependent concentration.
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1/50
Notes	-

Expected

Species	Mouse, Rat
Dilution info	Use at an assay dependent concentration.
Notes	-

IHC-P

Expected

Species	Human, Mouse, Rat

Dilution info	Use at an assay dependent concentration.
Notes	-

Target data

See full target information JAK2 pY1007 + Y1008

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: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).

Storage

Shipped at conditions	Blue Ice
Appropriate short-term storage duration	1-2 weeks
Appropriate short-term storage conditions	+4°C

Appropriate long-term storage conditions	-20°C
Aliquoting information	Upon delivery aliquot
Storage information	Avoid freeze / thaw cycle, Store in the dark

Notes

Patented technology
Our RabMAb® technology is a patented hybridoma-based technology for making rabbit monoclonal antibodies. For details on our patents, please refer to RabMAb® patents.

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Supplementary info

This supplementary information is collated from multiple sources and compiled automatically.

Activity summary	JAK2 also known as Janus kinase 2 is a protein tyrosine kinase with a molecular weight of 125 kDa. It plays an essential mechanical role in the signaling pathways by acting as an intermediary between cell surface receptors and intracellular signaling molecules. The JAK2 protein binds to certain cytokine receptors facilitating signal transduction necessary for various cellular responses. JAK2 is expressed in many tissues including hematopoietic cells which are associated with the blood and immune systems.
Biological function summary	JAK2 is important for transmitting signals that dictate cell growth survival and differentiation within the hematopoietic system. It operates bodily functions by forming complexes with specific phosphorylation sites on its associated receptors. Through this formation JAK2 influences the signaling cascade particularly by interacting with other signal transducers and activators where it phosphorylates and becomes activated. This action affects gene transcription directly correlated with cellular proliferation and differentiation processes.
Pathways	The function of JAK2 integrates into the JAK-STAT signaling pathway which is an important pathway in the regulation of immune function growth and development. It works in conjunction with proteins such as STAT3 and STAT5 to transmit signals

	from cytokine receptors to the nucleus. This pathway critically impacts responses like inflammation and hematopoiesis aligning with its role in precursor proliferation within the bone marrow and various immune cells' function.
Associated diseases and disorders	JAK2 has significant implications in conditions like myeloproliferative neoplasms and polycythemia vera. Mutations in the JAK2 gene notably the JAK2 V617F mutation lead to uncontrolled cell division as they disrupt normal signaling mechanisms often resulting in blood cell disorders. In these contexts JAK2 interacts with proteins such as EpoR and MPL which play roles within these disease pathways. Understanding how JAK2 mutations contribute to disease progression offers pathways for targeted therapies.

Product promise

Tested

We have tested this species and application combination and it works. It is covered by our product promise.

Expected

We have not tested this specific species and application combination in-house, but expect it will work. It is covered by our product promise.

Predicted

This species and application combination has not been tested, but we predict it will work based on strong homology. However, this combination is not covered by our product promise.

Not recommended

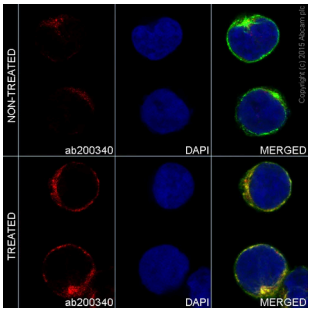
We do not recommend this combination. It is not covered by our product promise.

We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

In the unlikely event of one of our products not working as expected, you are covered by our product promise.

Full details and terms and conditions can be found here:
Terms & Conditions.

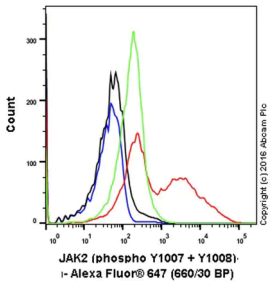
3 product images



Immunocytochemistry/ Immunofluorescence - Alexa Fluor® 647 Anti-JAK2 (phospho Y1007 + Y1008) + JAK1 (phospho Y1034 + Y1035) antibody [E132] (ab200340)

JAK2 (phospho Y1007 + Y1008) + JAK1 (phospho Y1034 + Y1035) Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-JAK2 (phospho Y1007 + Y1008) + JAK1 (phospho Y1034 + Y1035) antibody

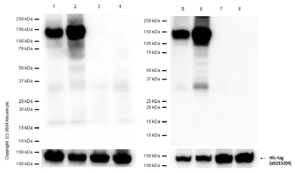
ab200340 staining JAK2 (phospho Y1007 + Y1008) in Jurkat cells, starved of serum for 16 hours then treated with 1mM Pervanadate for 30mins at 37°C (Treated) or solvent-only for control purposes (Non-treated). The cells were fixed with 4% formaldehyde (10 min) permeabilized with 0.1% Triton X-100 for 5 minutes and then blocked with 10% normal goat serum in 0.1% PBS-Tween for 1h. The cells were then incubated overnight at +4°C with ab200340 at 1/100 dilution (shown in red) and ab195887, Mouse monoclonal to alpha Tubulin (Alexa Fluor® 488) at 1/200 dilution (shown in green). Nuclear DNA was labelled with DAPI (shown in blue).
Image was taken with a confocal microscope (Leica-Microsystems, TCS SP8).



Flow Cytometry (Intracellular) - Alexa Fluor® 647 Anti-JAK2 (phospho Y1007 + Y1008) + JAK1 (phospho Y1034 + Y1035) antibody [E132] (ab200340)

JAK2 (phospho Y1007 + Y1008) + JAK1 (phospho Y1034 + Y1035) Flow Cytometry (Intracellular) staining using rabbit Anti-JAK2 (phospho Y1007 + Y1008) + JAK1 (phospho Y1034 + Y1035) antibody

Intracellular Flow Cytometry analysis of Jurkat (human acute T cell leukemia) cells starved of serum for 16 hours then treated with 1 mM Pervanadate for 30 minutes labeling JAK2 (phospho Y1007 + Y1008) with purified ab200340 at 1/50 dilution (10ug/mL) (red). Cells were fixed with 4% paraformaldehyde and permeabilised with 90% methanol. A Goat anti rabbit IgG (Alexa Fluorr®647) was used as the secondary antibody. Rabbit monoclonal IgG (Black) was used as the isotype control, cells without incubation with primary antibody and secondary antibody (Blue) was used as the unlabeled control. Unstimulated Jurkat cells were used as a negative control (Green).



Western blot - Alexa Fluor® 647 Anti-JAK2 (phospho Y1007 + Y1008) + JAK1 (phospho Y1034 + Y1035) antibody [E132] (ab200340)

JAK2 (phospho Y1007 + Y1008) + JAK1 (phospho Y1034 + Y1035) Western blot staining using rabbit Anti-JAK2 (phospho Y1007 + Y1008) + JAK1 (phospho Y1034 + Y1035) antibody

This data was developed using the same antibody clone in a different buffer formulation (ab32101).
Blocking and dilution buffer: 5% NFDM /TBST.

All lanes:
Western blot - Anti-JAK2 (phospho Y1007 + Y1008) + JAK1 (phospho Y1034 + Y1035) antibody [E132] (ab32101) at 1/1000 dilution

Lane 1:
293T cells transfected with a Human JAK1 expression vector containing a His tag whole cell lysate at 20 µg

Lane 2:
293T cells transfected with a Human JAK1 expression vector containing a His tag were treated with 50uM pervanadate for 30 min whole cell lysate at 20 µg

Lane 3:
293T cells transfected with a Human JAK1 (mutated Y1034A, mutated Y1035A) expression vector containing a His tag whole cell lysate at 20 µg

Lane 4:
293T cells transfected with a Human JAK1 (mutated Y1034A, mutated Y1035A) expression vector containing a His tag were treated with 50uM pervanadate for 30 min whole cell lysate at 20 µg

Lane 5:
293T cells transfected with a Human JAK2 expression vector containing a His tag whole cell lysate at 20 µg

Lane 6:
293T cells transfected with a Human JAK2 expression vector containing a His tag were treated with 50uM pervanadate for 30 min whole cell lysate at 20 µg

Lane 7:
293T cells transfected with a Human JAK2 (mutated Y1007A, mutated Y1008A) expression vector containing a His tag whole cell lysate at 20 µg

Lane 8:
293T cells transfected with a Human JAK2 (mutated Y1007A, mutated Y1008A) expression vector containing a His tag were treated with 50uM pervanadate for 30 min whole cell lysate at 20 µg

Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/20000 dilution

Performed under reducing conditions.

Observed band size: 130 kDa

Exposure time: 7s

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