abcam

ab219728

Anti-JAK2 (phospho Y1007 + Y1008) + JAK1 (phospho Y1034 + Y1035) antibody [E132] - BSA & Azide free

Rabbit Recombinant Monoclonal JAK2 phospho Y1007 + Y1008 and JAK1 phospho Y1034 + Y1035 antibody. Carrier free. Suitable for IHC-P, ICC/IF, ELISA, Dot, WB, Flow Cyt (Intra) and reacts with Human, Mouse, Rat, Synthetic peptide samples. Cited in 23 publications.

Recombinant | RabMAb

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.2 - 7.4 Constituents: PBS
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Carrier free	Yes
Clone number	E132
Purification technique	Affinity purification Protein A
Specificity	This antibody is phospho-specific and only detects phosphorylated JAK2 on Tyrosine 1007 and 1008 (pY1007+Y1008) and JAK1 on Tyrosine 1034 and 1035 (pY1034+Y1035). According to our ELISA results, this antibody preferentially recognizes phospho Y1007. Stimulation may be required to allow detection of the phosphorylated protein. Please see images below for recommended treatment conditions and positive controls.
Concentration	1.029 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IHC-P

Tested

Species	Human
Dilution info	-
Notes	Perform heat-mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

Not recommended

Species	Mouse, Rat, Synthetic peptide
Dilution info	-
Notes	-

ICC/IF

Tested

Species	Human
Dilution info	-
Notes	-

Expected

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

Not recommended

Species	Synthetic peptide
Dilution info	-
Notes	-

ELISA

Tested

Species	Synthetic peptide
Dilution info	-
Notes	-

Expected

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

Dot

Tested

Species	Human
Dilution info	-
Notes	-

Expected

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

Not recommended

Species	Synthetic peptide
Dilution info	-
Notes	-

WB

Tested

Species	Human
Dilution info	-
Notes	The samples may require stimulation (E.g., Jurkat cells treated with pervanadate for 5 min)

Species	Mouse
Dilution info	-
Notes	The samples may require stimulation (E.g., Jurkat cells treated with pervanadate for 5 min)

Species	Rat
Dilution info	-
Notes	The samples may require stimulation (E.g., Jurkat cells treated with pervanadate for 5 min)

Not recommended

Species	Synthetic peptide
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	-
Notes	ab199376 - Rabbit monoclonal IgG, is suitable for use as an isotype control with this antibody.

Expected

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

Not recommended

Species	Synthetic peptide
Dilution info	-
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 conditions	+4°C

Appropriate long-term storage conditions	+4°C
Storage information	Do Not Freeze

Notes

ab219728 is the carrier-free version of ab32101.

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.

What are the advantages of a recombinant monoclonal antibody?
This product is a recombinant monoclonal antibody, which offers several advantages including:

- High batch-to-batch consistency and reproducibility
- Improved sensitivity and specificity
- Long-term security of supply
- Animal-free batch production

For more information, read more on recombinant antibodies.

Conjugation ready
Our carrier-free antibodies are typically supplied in a PBS-only formulation, purified and free of BSA, sodium azide and glycerol. This conjugation-ready format is designed for use with fluorochromes, metal isotopes, oligonucleotides, and enzymes, which makes them ideal for antibody labelling, functional and cell-based assays, flow-based assays (e.g. mass cytometry) and Multiplex Imaging applications.

Use our conjugation kits for antibody conjugates that are ready-to-use in as little as 20 minutes with 1 minute hands-on-time and 100% antibody recovery: available for fluorescent dyes, HRP, biotin and gold.

Compatibility
This product is compatible with the Maxpar® Antibody Labeling Kit from Fluidigm, without the need for antibody preparation. Maxpar® is a trademark of Fluidigm Canada Inc.

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

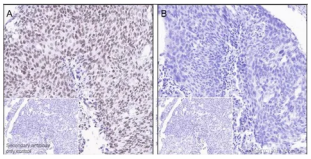
We do not recommend this combination. It is not covered by our product promise.

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.

11 product images

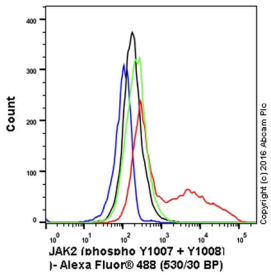


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-JAK2 (phospho Y1007 + Y1008) + JAK1 (phospho Y1034 + Y1035) antibody [E132] - BSA & Azide free (ab219728)

JAK2 (phospho Y1007 + Y1008) + JAK1 (phospho Y1034 + Y1035) Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) 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 containing PBS, BSA, glycerol, and sodium azide (ab32101).
ab32101 showing positive staining in Human differentiated squamous cell carcinoma of the cervix tissue at 1/10000 dilution. Goat Anti-Rabbit IgG H&L (HRP) was used as secondary antibody. Antigen retreival was carried out by Heat mediated antigen retrieval using ab93684 (Tris/EDTA buffer, pH 9.0).

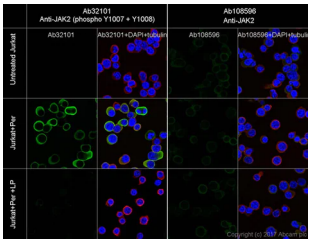
Nuclear staining on human differentiated squamous cell carcinoma of the cervix without alkaline phosphatase treatment (image A). No staining on human differentiated squamous cell carcinoma of the cervix with alkaline phosphatase treatment (image B)



Flow Cytometry (Intracellular) - Anti-JAK2 (phospho Y1007 + Y1008) + JAK1 (phospho Y1034 + Y1035) antibody [E132] - BSA & Azide free (ab219728)

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 ab32101 at 1/20 dilution (10 ug/mL) (red). Cells were fixed with 4% paraformaldehyde and permeabilised with 90% methanol. A Goat anti rabbit IgG (Alexa Fluor®488) at 1/2000 dilution 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).
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab32101).

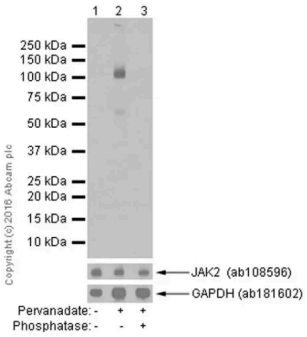


Immunocytochemistry/ Immunofluorescence - Anti-JAK2 (phospho Y1007 + Y1008) + JAK1 (phospho Y1034 + Y1035) antibody [E132] - BSA & Azide free (ab219728)

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

Immunocytochemistry/Immunofluorescence analysis of Jurkat +/- pervanadate (1mM, 30min) and Jurkat + pervanadate (1mM, 30min) + LP cells labelling JAK2 (phospho Y1007 + Y1008) with ab32101 at a dilution of 1/1000. Cells were fixed with 4% paraformaldehyde and permeabilized with 0.1% tritonX-100. ab150077 (goat anti-rabbit IgG Alexa Fluor® 488) (1/1000) was used as the secondary antibody. The cells were co-stained with ab195889 (Anti-alpha Tubulin antibody [DM1A] - Microtubule Marker (Alexa Fluor® 594)) at a 1/200 dilution. Nuclei counterstained with DAPI (blue).

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab32101).



Western blot - Anti-JAK2 (phospho Y1007 + Y1008) + JAK1 (phospho Y1034 + Y1035) antibody [E132] - BSA & Azide free (ab219728)

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 ab32101, the same antibody clone in a different buffer formulation.
All lanes:
Western blot - Anti-JAK2 (phospho Y1007 + Y1008) + JAK1 (phospho Y1034 + Y1035) antibody [E132] (ab32101) at 1/5000 dilution

Lane 1:
Untreated Jurkat cells whole cell lysates at 10 µg

Lane 2:
Jurkat cells were treated with 50mM Pervanadate for 5 minutes whole cell lysates at 10 µg

Lane 3:
Jurkat cells were treated with 50mM Pervanadate for 5 minutes whole cell lysates. Then the membrane was incubated with Alkaline phosphatase at 10 µg

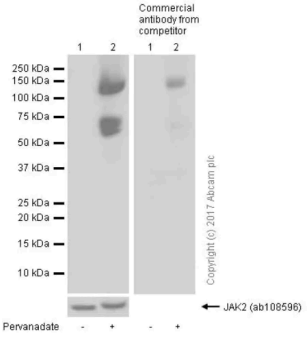
Secondary

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

Predicted band size: 131 kDa

Observed band size: 120 kDa

Exposure time: 5s



Western blot - Anti-JAK2 (phospho Y1007 + Y1008) + JAK1 (phospho Y1034 + Y1035) antibody [E132] - BSA & Azide free (ab219728)

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 ab32101, the same antibody clone in a different buffer formulation.
Exposure time:
Left image: 1 second
Right image: 5 minutes

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

Lane 1:
Jurkat (Human T cell leukemia T lymphocyte) whole cell lysates at 15 µg

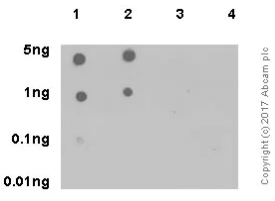
Lane 2:
Jurkat (Human T cell leukemia T lymphocyte) treated with 50mM Pervanadate for 5 minutes whole cell lysates at 15 µg

Secondary

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

Predicted band size: 131 kDa

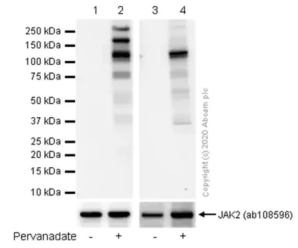
Observed band size: 120 kDa, 60 kDa



Dot Blot - Anti-JAK2 (phospho Y1007 + Y1008) + JAK1 (phospho Y1034 + Y1035) antibody [E132] - BSA & Azide free (ab219728)

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

Dot blot analysis of JAK2 (phospho Y1007 & Y1008) phospho peptide (Lane 1), JAK2 (phospho Y1007) phospho peptide (Lane 2), JAK2 (phospho Y1008) phospho peptide (Lane 3) and JAK2 non-phospho peptide (Lane 4) labelling JAK2 (phospho Y1007 & Y1008) with ab32101 at a dilution of 1/1000. A Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated (ab97051) was used as the secondary antibody at a dilution of 1/20,000. Blocking buffer: 5% NFDM/TBST. Dilution buffer: 5% NFDM /TBST.
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab32101).



Western blot - Anti-JAK2 (phospho Y1007 + Y1008) + JAK1 (phospho Y1034 + Y1035) antibody [E132] - BSA & Azide free (ab219728)

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 ab32101, the same antibody clone in a different buffer formulation. The extra bands are undefined.

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

Lane 1:
Hepa1-6 (Mouse hepatoma epithelial cell) whole cell lysate at 15 µg

Lane 2:
Hepa1-6 (Mouse hepatoma epithelial cell) treated with 100 µM pervanadate for 30 minutes whole cell lysate at 15 µg

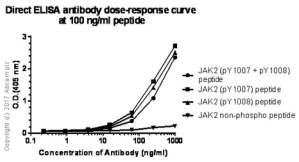
Lane 3:
MEF (Mouse embryonic fibroblast (immortalized)) whole cell lysate at 15 µg

Lane 4:
MEF (Mouse embryonic fibroblast (immortalized)) treated with 100 µM pervanadate for 30 minutes whole cell lysate at 15 µg

Secondary

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

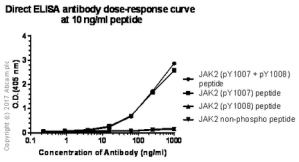
Predicted band size: 131 kDa



ELISA - Anti-JAK2 (phospho Y1007 + Y1008) + JAK1 (phospho Y1034 + Y1035) antibody [E132] - BSA & Azide free (ab219728)

Direct ELISA antigen dose-response curve using ab32101 at 0~1000 ng/mL. Antigen concentration of 100 ng/mL. An Alkaline Phosphatase-conjugated AffiniPure Goat Anti-Rabbit IgG (H+L) (1/2500) was used as the secondary antibody.
This antibody preferentially recognizes phospho Y1007. When the concentration of peptides is higher than 100 ng/mL, it also recognizes phospho Y1008.

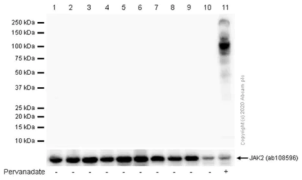
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab32101).



ELISA - Anti-JAK2 (phospho Y1007 + Y1008) + JAK1 (phospho Y1034 + Y1035) antibody [E132] - BSA & Azide free (ab219728)

Direct ELISA antigen dose-response curve using ab32101 at 0~1000 ng/mL. Antigen concentration of 10 ng/mL. An Alkaline Phosphatase-conjugated AffiniPure Goat Anti-Rabbit IgG(H+L) (1/2500) was used as the secondary antibody.
This antibody preferentially recognizes phospho Y1007. When the concentration of peptides is lower than 10 ng/mL, it cannot recognize phospho Y1008.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab32101).



Western blot - Anti-JAK2 (phospho Y1007 + Y1008) + JAK1 (phospho Y1034 + Y1035) antibody [E132] - BSA & Azide free (ab219728)

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 containing PBS, BSA, glycerol, and sodium azide (ab32101).
All lanes:
Western blot - Anti-JAK2 (phospho Y1007 + Y1008) + JAK1 (phospho Y1034 + Y1035) antibody [E132] (ab32101)

Lane 1:
Mouse hippocampus lysate at 15 µg

Lane 2:
Mouse P240 hippocampus lysate at 15 µg

Lane 3:
Mouse P7 hippocampus lysate at 15 µg

Lane 4:
Rat hippocampus lysate at 15 µg

Lane 5:
Rat P7 hippocampus lysate at 15 µg

Lane 6:
Rat brain cortex lysate at 15 µg

Lane 7:

Human brain lysate at 15 µg

Lane 8:
Mouse brain lysate at 15 µg

Lane 9:
Rat brain lysate at 15 µg

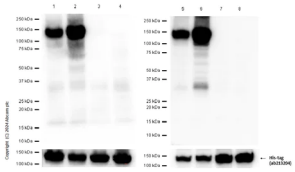
Lane 10:
C6 (Rat glial tumor glial cell) whole cell lysate at 15 µg

Lane 11:
C6 (Rat glial tumor glial cell) treated with 50mM pervanadate for 5 minutes whole cell lysate at 15 µg

Secondary

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

Predicted band size: 131 kDa



Western blot - Anti-JAK2 (phospho Y1007 + Y1008) + JAK1 (phospho Y1034 + Y1035) antibody [E132] - BSA & Azide free (ab219728)

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

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.