

Phospho-Jak2 (Tyr221) Antibody

✓ 100 µl
(10 western blots)

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This product is intended for research purposes only. This product is not intended to be used for therapeutic or diagnostic purposes in humans or animals.

Entrez-Gene ID #3717
Swiss-Prot Acc. #060674

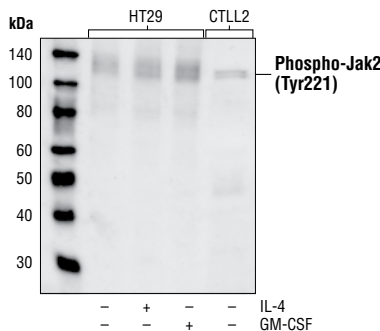
Applications	Species Cross-Reactivity*	Molecular Wt.	Source
W Endogenous	H, M, (R)	125 kDa	Rabbit**

Background: Members of the Janus family of tyrosine kinases (Jak1, Jak2, Jak3 and Tyk2) are activated by ligands binding to a number of associated cytokine receptors (1). Upon cytokine receptor activation, Jak proteins become autophosphorylated and phosphorylate their associated receptors to provide multiple binding sites for signaling proteins. These associated signaling proteins, such as Stats (2), Shc (3), insulin receptor substrates (4) and focal adhesion kinase (FAK) (5), typically contain SH2 or other phospho-tyrosine-binding domains.

Jak2 is autophosphorylated at Tyr1007/1008 in the putative activation loop during cytokine signaling (6). Tyr221 and 570 have also been shown to be prominent sites for autophosphorylation (7,8). Mutational analysis suggests that phosphorylation at Tyr221 may increase kinase activity, while phosphorylation at Tyr570, which lies within the JH2 inhibitory domain, may contribute to inhibiting Jak2 activity. In addition, Tyr813 was identified as a site for autophosphorylation critical for the activation of Jak2 by the SH2 domain-containing protein SH2-B β (9).

Specificity/Sensitivity: Phospho-Jak2 (Tyr221) Antibody detects endogenous levels of Jak2 only when phosphorylated at Tyr221.

Source/Purification: Polyclonal antibodies are produced by immunizing animals with a synthetic phosphopeptide corresponding to residues surrounding Tyr221 of human Jak2 protein. Antibodies are purified by protein A and peptide affinity chromatography.



Western blot analysis of extracts from HT-29 and CTLL-2 cells, untreated or treated with IL-4 or GM-CSF (10 minutes), using Phospho-Jak2 (Tyr221) Antibody. Both cell lines contain a high level of constitutively active Jak2.

Background References:

- (1) Leonard, W.J. and O'Shea, J.J. (1998) *Annu. Rev. Immunol.* 16, 293–322.
- (2) Darnell, J.E. (1997) *Science* 277, 1630–1635.
- (3) VanderKuur, J. et al. (1995) *J. Biol. Chem.* 270, 7587–7593.
- (4) Argetsinger, L.S. et al. (1995) *J. Biol. Chem.* 270, 14685–14692.
- (5) Zhu, T. et al. (1998) *J. Biol. Chem.* 273, 10682–10689.
- (6) Gauzzi, M.C. et al. (1996) *J. Biol. Chem.* 271, 20494–20500.
- (7) Argetsinger, L.S. et al. (2004) *Mol. Cell. Biol.* 24, 4955–4967.
- (8) Feener, E.P. et al. (2004) *Mol. Cell. Biol.* 24, 4968–4978.
- (9) Kurzer, J.H. et al. (2004) *Mol. Cell. Biol.* 24, 4557–4570.

Storage: Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA and 50% glycerol. Store at -20°C. Do not aliquot the antibody.

*Species cross-reactivity is determined by western blot.

**Anti-rabbit secondary antibodies must be used to detect this antibody.

Recommended Antibody Dilutions:

Western Blotting 1:1000

For application specific protocols please see the web page for this product at www.cellsignal.com.

Please visit www.cellsignal.com for a complete listing of recommended companion products.

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IMPORTANT: For western blots, incubate membrane with diluted antibody in 5% w/v BSA, 1X TBS, 0.1% Tween-20 at 4°C with gentle shaking, overnight.

Applications Key: W—Western IP—Immunoprecipitation IHC—Immunohistochemistry ChIP—Chromatin Immunoprecipitation IF—Immunofluorescence F—Flow cytometry E-P—ELISA-Peptide
Species Cross-Reactivity Key: H—human M—mouse R—rat Hm—hamster Mk—monkey Mi—mink C—chicken Dm—D. melanogaster X—Xenopus Z—zebrafish B—bovine
Dg—dog Pg—pig Sc—S. cerevisiae Ce—C. elegans Hr—Horse All—all species expected Species enclosed in parentheses are predicted to react based on 100% homology.