

## Genes Section

### Short Communication

# JAK2 (janus kinase 2)

Jean-Loup Huret

Genetics, Dept Medical Information, University of Poitiers, CHU Poitiers Hospital, F-86021 Poitiers, France

Published in Atlas Database: February 1998

Online version is available at: <http://AtlasGeneticsOncology.org/Genes/JAK98.html>

DOI: 10.4267/2042/32099

This work is licensed under a Creative Commons Attribution-Non commercial-No Derivative Works 2.0 France Licence.  
© 1998 *Atlas of Genetics and Cytogenetics in Oncology and Haematology*

### Identity

Location: 9p24

### DNA/RNA

#### Description

24 exons spanning 140 kb; 4.2 kb cDNA.

### Protein

#### Description

1132 amino acids.

#### Expression

Wide.

#### Localisation

Possibly membrane associated.

#### Function

Tyrosine kinase; associates with the intracellular domains of cytokine receptors; signal transduction.

#### Homology

>90% identical to the mouse and the rat JAK2 homologs; belongs to the janus kinase subfamily (JAK1, JAK3, TYK2).

### Implicated in

**t(9;12)(p24;p13)/acute leukaemias → JAK2/ETV6**

#### Prognosis

Unknown.

#### Hybrid/Mutated Gene

5' ETV6 - 3' JAK2.

#### Abnormal Protein

N-term- HLH from ETV6 fused to the the tyrosine Kinase c-term domains of JAK2.

#### Oncogenesis

It may be speculated that the HLH domain of ETV6 provides a dimerization interface to the kinase domain of JAK2, which activates JAK2.

### References

Lacronique V, Boureux A, Valle VD, Poirel H, Quang CT, Mauchauffe M, Berthou C, Lessard M, Berger R, Ghysdael J, Bernard OA. A TEL-JAK2 fusion protein with constitutive kinase activity in human leukemia. *Science* 1997;278:1309-12.

Peeters P, Raynaud SD, Cools J, Wlodarska I, Grosgeorge J, Philip P, Monpoux F, Van, Rompaey L, Baens M, Van den Berghe H, Marynen P. Fusion of TEL, the ETS-variant gene 6 (ETV6), to the receptor-associated kinase JAK2 as a result of t(9;12) in a lymphoid and t(9;15;12) in a myeloid leukemia. *Blood* 1997;90:2535-40.

*This article should be referenced as such:*

Huret JL. JAK2 (janus kinase 2). *Atlas Genet Cytogenet Oncol Haematol.* 1998;2(1):14.