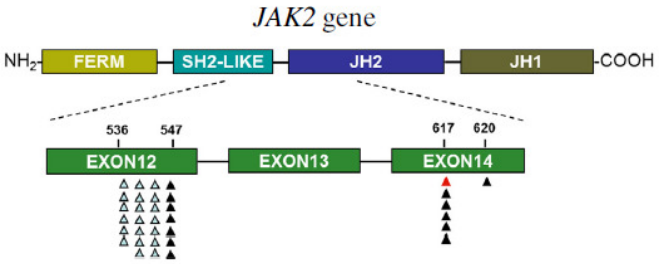
TRUPCR®JAK2 mutation detection Real Time PCR KIT



TRUPCR® JAK2 mutation kit is an allelic discriminationreal-time polymerase chain reaction (PCR) assay for qualitative detection of V617F mutation in Jak2(Janus Kinase 2) gene against a background of wild-type genomic DNA.This mutation is a guanine to thymidine transversion in position 1849 of the JAK2 gene, which leads to a valine to phenylalanine substitution in position 617 of the protein (V617F). The test utilizes mutation-specific primers and aJAK2 V617F/G1849T targeted fluorescent probe to detect low-copy number (1%)JAK2V617F-mutant DNA in cancer tissue.

The assay is available with 1% validated reference standard as a cut-off control to detect lower allelic frequencies.

Key features:

- The test allows highly sensitivesite-specific detection of less than 1% mutant sequence copies in a background of 99% wild-type DNA
- The test is available with 1% reference standard, a third party cut-off control for accurate reporting of mutation detected
- High specificity due to site-specific special probes utilized in the reaction
- Complementary software analysis tool for easy detection and differentiation of mutants among wild-types.
- Easy workflow & compatible with most of the real-time PCR equipments.

More about Jak2

The Janus kinase 2 gene (JAK2) codes for a tyrosine kinase (JAK2) that is associated with the cytoplasmic portion of a variety of transmembrane cytokine and growth factor receptors important for signal transduction in hematopoietic cells. Signaling via JAK2 activation causes phosphorylation of downstream signal transducers and activators of transcription (STAT) proteins (eg, STAT5) ultimately leading to cell growth and differentiation.

Chronic myeloproliferative neoplasms (MPNs) are clonal hematopoietic stem cell malignancies characterized by excessive production of blood cells. BCR-ABL1-negative MPN frequently harbor an acquired single nucleotide mutation in JAK2 characterized as c.G1849T; p. Val617Phe (V617F) and it is a gain-of-function mutation that leads to clonal proliferation. The JAK2 V617F is present in 95% to 98% of polycythemia vera (PV), and 50% to 60% of primary myelofibrosis (PMF) and essential thrombocythemia (ET). It has also been described infrequently in other myeloid neoplasms, including chronic myelomonocytic leukemia and myelodysplastic syndrome. Diagnostic criteria for ET, MF, and PV adopted by the World Health Organization (WHO) include identification of a clonal marker, with a specific recommendation to test for the *JAK2* V617F mutation in exon 14.[1,2]Detection of the JAK2 V617F is useful to help establish the diagnosis of MPN and The *JAK2* allele burden decreases with successful therapy, disappears in some patients, and reappears during relapse.[3,4]

References:

1. Tefferi A, Vardiman JW. Classification and diagnosis of myeloproliferative neoplasms: the 2008 World Health Organization criteria and point-of-care diagnostic algorithms. *Leukemia*. 2008;22:14-22.
2. Jerald Z. Gong, et al. Laboratory Practice Guidelines for Detecting and Reporting JAK2 and MPL Mutations in Myeloproliferative Neoplasms. J Mol Diagn 2013, 15: 733e744.
3. Kiladjian JJ, Cassinat B, Turlure P, et al. High molecular response rate of polycythemia vera patients treated with pegylated interferon α-2a. *Blood*. 2006;108:2037-2040.
4. Kröger N, Badbaran A, Holler E, et al. Monitoring of the *JAK2*-V617F mutation by highly sensitive quantitative real-time PCR after allogeneic stem cell transplantation in patients with myelofibrosis. *Blood*. 2007;109:1316-1321.

Ordering information:

Cat. No.	Product	Contents
3B1246	TRUPCR® Jak2 mutation detection kit	48Rxn
3B1247	TRUPCR® Jak2 mutation detection kit	96Rxn

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