Henry Ford Health System
CENTER FOR PRECISION DIAGNOSTICS

Myeloproliferative Neoplasm (MPN) Panel

The MPN Panel provides targeted detection of mutations in JAK2, CALR and MPL genes using DNA extracted from blood or bone marrow samples. These genes were selected based on WHO criteria and the National Comprehensive Cancer Network (NCCN) guidelines for diagnosis of myeloproliferative neoplasms (MPN). This test is used for diagnostic, prognostic, and predictive purposes.

Testing Method and Background

This test utilizes amplicon-based targeted **Next Generation Sequencing (NGS) technology** for detection of hotspot mutations in JAK2, CALR and MPL genes. The panel is used for diagnosis/follow-up of myeloproliferative neoplasms (MPN). This test identifies the presence of JAK2 mutations in both exons 12 and 14, which includes JAK2 V617F activating mutation. The JAK2 V617F mutation has been reported in ~95% of patients with polycythemia vera (PV), and 50%-60% of patient with essential thrombocythemia (ET) and primary myelofibrosis (PMF). JAK2 V617F mutation has also been reported in ~60% of patients with myelodysplastic/myeloproliferative neoplasm with ring sideroblasts and thrombocytosis (MDS/MPN-RS-T), and in 3-5% of patients with myelodysplastic syndrome (MDS). Variable deletions and insertions in exon 12 of JAK2 have been detected in ~3%-5% of PV patients who lack JAK2 V617F mutation. Somatic insertion/deletion CALR mutations in exon 9 have been reported to be mutually exclusive with JAK2 and MPL mutations, and have been identified in 20-35% of patients with ET and PMF. This represents about 80-90% of ET and PMF patients who lack somatic JAK2 and MPL mutations. MPL mutations have been reported in 5%-10% of ET and PMF patients.

Highlights of MPN Panel

Targeted Regions

JAK2: Exons 12 + 14
CALR: Exon 10
MPL: Exons 3-5

- **Accurate Results from Low-Quality Samples**
  Workflow with low quantity of input DNA and accurate detection of variants down to 5% mutant allele frequency.
- **Wide-ranging Coverage of Variants**
  Assessment of single-nucleotide variants (SNVs) and small insertions/deletions within multiple target exons

Ordering Information

Get started (non-HFHS): Print a Molecular Hematologic Testing requisition form online at www.HenryFord.com/HFCPD

Get started (HFHS): Order through Epic using test "Myeloproliferative Neoplasm Panel" (MOL80501 Blood, MOL80502 Bone Marrow)

Specimen requirements:

- Peripheral Blood - 1-3ml in lavender top tube (EDTA) **Specimen stability: Ambient - 72 hours; Refrigerated - 1 week**
- Bone Marrow - 1-3ml, anticoagulated with either heparin or EDTA, **Specimen stability: Refrigerated - 1 week** (ship cold)
- Extracted DNA - from a CLIA-certified Laboratory

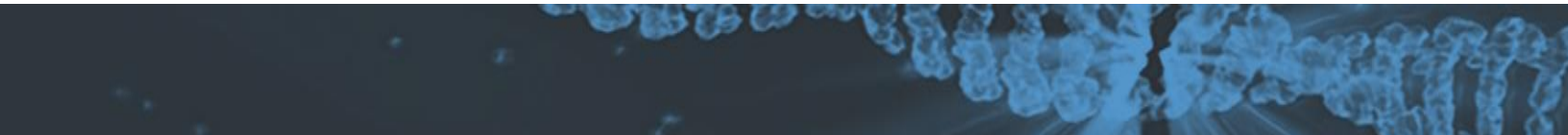
Cause for Rejection: Clotted, hemolyzed, or frozen specimens, improper anticoagulant, tubes not labeled with dual patient identification, non-dedicated tubes.

TAT: 5-10 business days (after Prior Authorization obtained)

Mail test material to:
Henry Ford Center for Precision Diagnostics
Pathology and Laboratory Medicine
Clinic Building, K6, Core Lab, E-655
2799 W. Grand Blvd., Detroit, MI 48202

CPT Codes: 81279, 81219, 81339, G0452

Contact us: Client Services, Account and Billing Set-up, and connect with a Molecular Pathologist at (313) 916-4DNA (4362)

For more information on Comprehensive Molecular Services, visit our website
www.HenryFord.com/HFCPD

Revision: 1; 02-08-2021