COMPASS®
A suite of sample-to-diagnosis services to help navigate the complexities of hematological malignancies
Your COMPASS® service is fully personalized and guided by a board-certified hematopathologist, who will evaluate all clinical history and laboratory information provided to determine the best testing regimen.

1. As medically necessary, multi-modal testing (e.g., cytogenetics, FISH, flow cytometry, morphology, molecular including NGS, etc.) will be used to arrive at the most accurate diagnosis. Notifications for acute cases will be returned within 24 hours of sample receipt.

2. You will be provided an all-in-one assessment report, unique to your patient, detailing their definitive diagnosis and compiling results from all modalities utilized.

3. Available for peripheral blood and bone marrow specimens

Why choose COMPASS®?

With over 100 different subtypes of leukemias, lymphomas and myelomas, reaching a definitive diagnosis requires the time and expertise to manage ever-evolving clinical guidelines and testing criteria.

COMPASS Hematopathology Services is a comprehensive single-order sample-to-diagnosis service for complex heme malignancies

- Results are definitive
- Driven by board-certified hematopathologists
- All-in-one report: Ideal for community oncologists and pathologists

Set your patients on the right course from the start
Demand definitive answers for optimal patient care

Clinical History:
The patient is a 53-year-old female with a clinical diagnosis or consideration of neutropenia, leukopenia, anemia, and thrombocytopenia. CBC report received from the ordering facility and dated 27MAR2023 indicates WBC 3.3 K/uL, RBC 3.83 M/uL, Hgb 12.2 g/dL, Hct 38.1%, MCV 99.5 fL, MCH 31.9 pg, MCHC 32.0 g/dL, RDW 14.4%, Plts 131 K/uL with a differential count of neutrophils: 35.1%, lymphocytes: 60.0%, monocytes: 4.0%, eosinophils: 0.6%, basophils: 0.3%.

Final Diagnosis: Myelodysplastic neoplasm with low blasts and single lineage dysplasia

Comprehensive Assessment
For this patient with a clinical diagnosis or consideration of neutropenia, leukopenia, anemia, and thrombocytopenia, her bone marrow is hypercellular and demonstrates multilineage hematopoiesis displaying maturation, erythroid hyperplasia, mild atypia, and ~1% blasts. Flow cytometry does not detect immunophenotypic evidence of a lymphoproliferative disorder, increased blasts, or a plasma cell neoplasm. Karyotyping is normal. NGS detects a TET2 mutation. Overall, findings are consistent with the presence of myelodysplasia best characterized as myelodysplastic neoplasm with low blasts and single lineage dysplasia (WHO 5th edition). Age-adjusted risk according to the revised IPSS is very low. There is no evidence of metastatic carcinoma. Mild focal reticulin fibrosis is noted. Specimen limitations preclude optimal stainable storage iron assessment. Ring sideroblasts are not seen. Final interpretation requires correlation with clinical findings.

Morphology
BONE MARROW, CORE BIOPSY, CLOT SECTION, AND ASPIRATE SMEARS:
• Hypercellular bone marrow (60-70%) with multilineage hematopoiesis demonstrating maturation, erythroid hyperplasia, mild atypia, and ~1% blasts.
• No evidence of a lymphoproliferative disorder, a plasma cell neoplasm, or metastatic carcinoma.
• Mild focal reticulin fibrosis.

PERIPHERAL BLOOD:
• Leukopenia with neutropenia (WBC 3.3 K/uL, ANC 1.1 K/uL).
• Borderline anemia (Hgb 12.2 g/dL, MCV 99.5 fL).
• Borderline thrombocytopenia (platelets 131 K/uL).

Flow Cytometry
No diagnostic immunophenotypic abnormalities detected.

Cytogenetics
46,XX[20] NORMAL FEMALE KARYOTYPE
Cytogenetic analysis shows a normal female karyotype in all cells analyzed.

Neo Comprehensive - Myeloid Disorders
TET2; p.G321* DETECTED

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Chart a course that best suits your needs

COMPASS® SELECT
A versatile solution for pathologists

COMPASS SELECT is a COMPASS offering optimized for pathologists with local morphologic evaluation capabilities.

- Led by a board-certified hematopathologist, your existing morphologic results are seamlessly integrated into the COMPASS SELECT assessment.
- Only medically necessary additional tests are performed to arrive at a conclusive diagnosis.

Your COMPASS service is fully personalized and guided by a board-certified hematopathologist, who will evaluate all clinical history and laboratory information provided to determine the best testing regimen.
Myeloid neoplasm involving peripheral blood.

**PERIPHERAL BLOOD SMEAR REVIEW:** Normocytic normochromic RBCs with mild anisocytosis. Leukocytosis with absolute neutrophilia and shift to immaturity including many myelocytes Absolute monocytosis with slightly shift to immaturity Lymphocytes are normal in number and are composed of mixture of small and large lymphocytes Moderate thrombocytopenia with rare large platelets. The peripheral smear findings are consistent with the reported CBC.

**MORPHOLOGY**

- PERIPHERAL BLOOD: Normocytic anemia, leukocytosis with left-shifted neutrophilia and monocytosis, and thrombocytopenia

**Diagnosis**

Myeloid neoplasm involving peripheral blood.

Myeloproliferative neoplasm, unclassifiable.

Chronic myelomonocytic leukemia (CML-M0).

Chronic myelomonocytic leukemia (CML-M0). Systemic mastocytosis with an associated hematological neoplasm.

**Clinical History:**

The patient is a 55-year-old female with clinical diagnosis or consideration of leukocytosis, anemia, monocytosis, basophilia, thrombocytopenia, and KIT mutation. Chronic myelomonocytic leukemia. Accompanying CBC report, received from the ordering facility and dated 18 JAN 2022, indicates WBC 8.9 k/uL, RBC 3.73 M/uL, Hgb 11.8 g/dL, Hct 36.5%, MCV 97.9 fL, MCH 31.6 pg, MCHC 32.3 g/dL, RDW 17.5%, Plts 61 k/uL, with a differential count of neutrophils: 55.2%, lymphocytes: 16.8%, monocytes: 12.6%, eosinophils: 0.1%, basophils: 0.3%, Ig: 15.8%, MRBC 0.9%.

**Reason for Referral:** CHRONIC MYELOMONOCYTIC LEUKEMIA NOT HAVING ACHIEVED REMISSION

**Final Diagnosis:**

Chronic myelomonocytic leukemia (CMML-0). Systemic mastocytosis with an associated hematological neoplasm.

**Comprehensive Assessment**

The marrow morphologic findings, including hypercellular marrow with granulocytic and monocytic hyperplasia and dysplasia, are typical of chronic myelomonocytic leukemia, supported by the presence of accumulation of TET2 and SRSF2 on prior and current molecular testing. Blasts are quantitated at less than 5%; there is mild reticulin fibrosis. Also present are increased mast cells, showing atypical forms, aberrant CD25 expression, and KIT D816V mutation, meeting criteria for systemic mastocytosis. Taken together, this is typical of systemic mastocytosis with an associated hematological neoplasm. Clinical correlation is recommended.

**Data columns show previous and current results, allowing for longitudinal evaluation**

**Final and definitive diagnosis**

**Monitoring your patient’s response to therapy**

**Determining disease progression**

**Evaluating clonal evolution**

**Assessing residual disease**

When serial or subsequent COMPASS® evaluations are requested on a single patient, NeoGenomics will automatically provide a CHART® report. Each CHART report comprises a series of COMPASS reports generated over time. The CHART report format allows direct comparison of multiple prior COMPASS work-ups for patients being monitored across various clinical applications:

- Monitoring your patient’s response to therapy
- Determining disease progression
- Evaluating clonal evolution
- Assessing residual disease

CHART® Comprehensive Hematopathology Assessment and Review over Time
Neogenomics Laboratories is a specialized oncology reference laboratory providing the latest technologies, testing, partnership opportunities, and interactive education to the oncology and pathology communities. We offer the complete spectrum of diagnostic services in NGS, FISH, cytogenetics, flow cytometry, and immunohistochemistry through our nationwide network of CAP-accredited, CLIA-certified laboratories.

The COMPASS® suite of services
Personalized expertise and definitive diagnoses in heme cancers

- Nearly 20 years of COMPASS experience
- 35+ board-certified hematopathologists
- Timely and definitive results
- Get notified within 24 hours of receipt of sample for acute cases

Learn more at neogenomics.com