AML - *NPM1* MRD Assay

Measurable Residual Disease Detection of *NPM1* Mutations

Clinical Information

Measurable residual disease (MRD) detection in patients with leukemia is useful for the clinical management of disease, and can facilitate the development of new therapies.

Mutations in the nucleophosmin (*NPM1*) gene represent some of the most prevalent gene mutations in AML.[1] *NPM1* mutations predominantly occur in AML with normal cytogenetics and are of prognostic value, especially within the context of *FLT3* ITD mutations. Furthermore, because *NPM1* displays a homogeneous mutation pattern, this gene represents an attractive target for MRD monitoring.[2]

LabPMM's *NPM1* MRD test* is a NGS-based, targeted, deep-sequencing assay that can be used to detect *NPM1* mutations that were previously identified in a primary sample. The sensitive assay reliably detects sequences present at 5 x 10^{-5}.

MRD detection by Next-Generation Sequencing has demonstrated utility in predicting clinical outcomes and in generating clinically actionable results, allowing early intervention, confirmation of disease status prior to transplant, and increased confidence in remission status.

Workflow Overview

- **Sample Receipt** Peripheral blood, bone marrow aspirate, or DNA
- **NGS Testing, CLIA-Validated Assay** Sensitivity 5x10^{-5}
- **Turnaround Time** 7 to 10 Business Days
- **Results Report** with Scientific Interpretation

**NPM1* testing is covered by patents licensed to Invivoscribe by TrovaGene, Inc.

Indications for Testing

- Post-treatment monitoring
- Stratify risk for disease recurrence
- Identify tumor-specific markers for post-treatment for monitoring

Interpretation

An interpretive report will be issued indicating whether *NPM1* MRD was detected.

Specimen Requirements

- 1-3 mL of peripheral blood in EDTA
- 0.25-1 mL of bone marrow in EDTA
- 1 µg of previously isolated DNA

Turnaround Time

7 to 10 business days

Shipping Conditions

- Ambient or Cool; do not freeze **(peripheral blood or bone marrow)**
- Ambient or frozen on dry ice **(isolated DNA)**

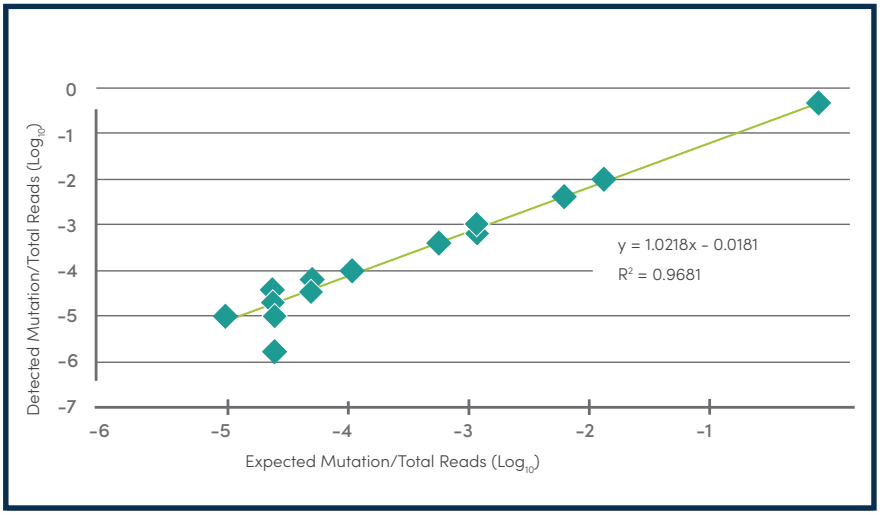
Specimen Stability

2-8 °C up to 7 days **prior to testing**

CPT Codes

PLA Code: 0049U

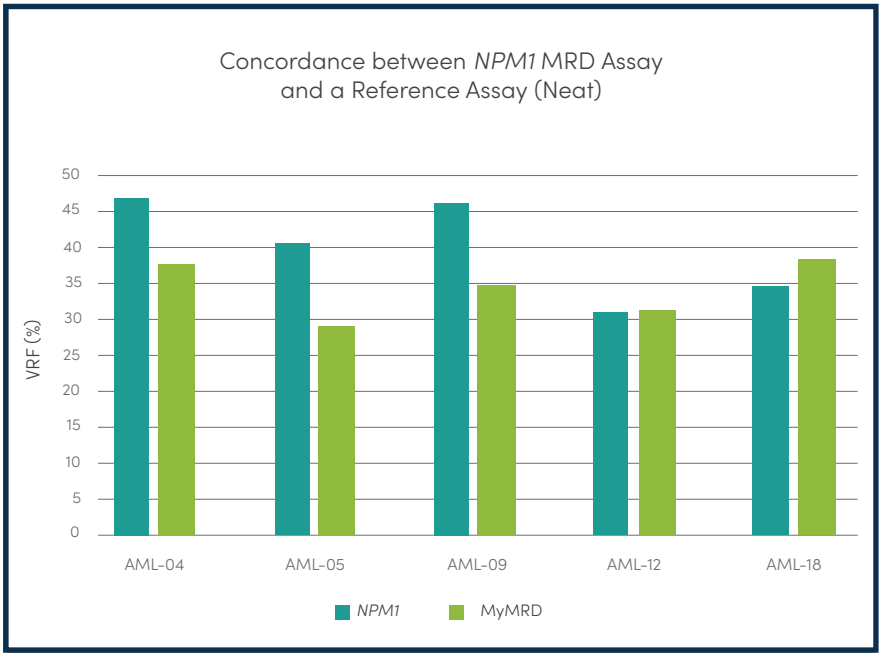
LabPMM®
an invivoscribe® company



DNA from a cell line with a characterized *NPM1* mutation (4 bp insertion) was serially diluted into DNA from a wild-type *NPM1* cell line and tested with the *NPM1* MRD Assay. Input DNA quantity was 700 ng per dilution point. The *NPM1* MRD Data Analysis Software was used to analyze the data.

Unparalleled Sensitivity

The NGS-based *NPM1* MRD assay offered by LabPMM can generate clinically actionable results, aid in early intervention, and can help predict clinical outcomes. As shown in below, the assay provides excellent linearity with the detection limit down to $5x10^{-5}$.



Excellent Concordance

Eight AML samples were evaluated using the NGS *NPM1* MRD assay and compared to a capillary electrophoresis and a NGS panel assay (MyMRD®). Mutations were detected in 5 of 8 samples tested and results were 100% concordant to both reference assays. Selected *NPM1* positive AML samples were serially diluted and expected variant read frequency (VRF) was detected down to 0.3% with the *NPM1* MRD Assay.

References

1. Falini, B. et al. (2005) *N Engl J Med* 352:254–266.

2. Krönke, J. et al. (2011) *J Clin Oncol* 29:2709-2716.

LabPMM®
an invivoscribe company

invivoscribe.com/clinical-services
Tel +1 858.224.6666 | Fax +1 858.408.3964
support@labpmm.com

M-0151 Rev 01 March 2024