sysmex | Lighting the way with diagnostics

AML-MRD-SEQ Panel

Ultra-sensitive liquid biopsy solution for the detection of established and emerging gene mutations associated with Acute Myeloid Leukemia (AML)

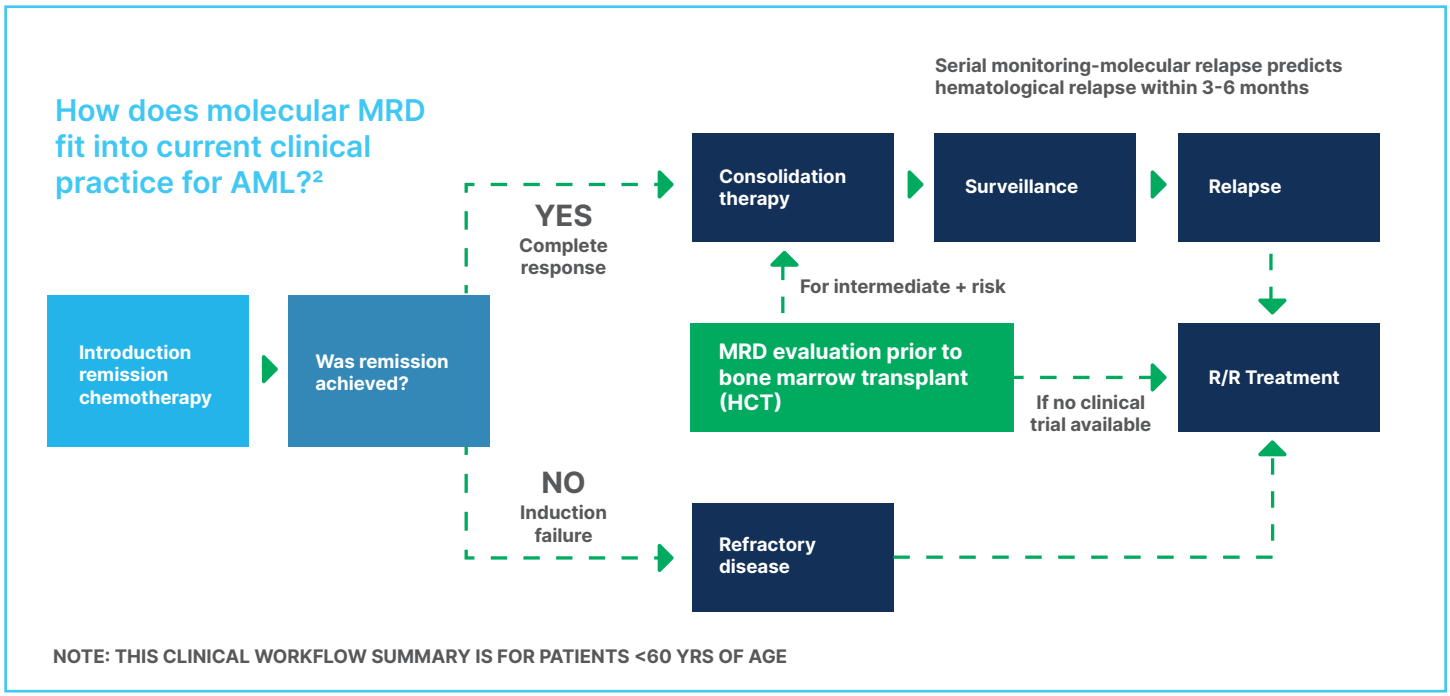
www.sysmex-inostics.com

AML-MRD-SEQ

Enabling discoveries in AML patient management through minimal residual disease (MRD) detection

AML is diagnosed in more than 20,000 people annually, affecting both males and females, children and adults. Although remission is achieved in most adult patients, those that relapse following induction chemotherapy experience a 5-year overall survival rate of only 30-40%.[1] The presence or absence of MRD in AML patients has emerged as an important tool for improving patient management and outcomes by enabling:

- Refined risk classification
- More robust post-transplant surveillance
- Accelerated therapeutic development as a surrogate endpoint



Ultra-sensitive

When testing for MRD in AML patients, assay sensitivity is of absolute importance to enable therapeutic decision-making and disease monitoring for optimal outcomes.

The highly sensitive AML-MRD-SEQ assay can reliably detect molecular MRD present at levels as low as seven mutant molecules, which is similar to the limit of detection observed across other Plasma-Safe-SeqS platform configurations and corresponds to 0.035% MAF for 20,000 genomic copies (66 ng of DNA) input.[3]

Increased genomic coverage

Complex clonal dynamics of AML demand coverage across more genomic regions than current digital PCR methods are able to interrogate. However, current NGS pan-heme panels lack sufficient sensitivity for reliable detection of MRD, as their limits of detection are between 1-5% mutant allele frequency (MAF).[4] AML-MRD-SEQ addresses and overcomes both challenges by delivering an ultra-sensitive assay with increased, yet targeted, genomic coverage.

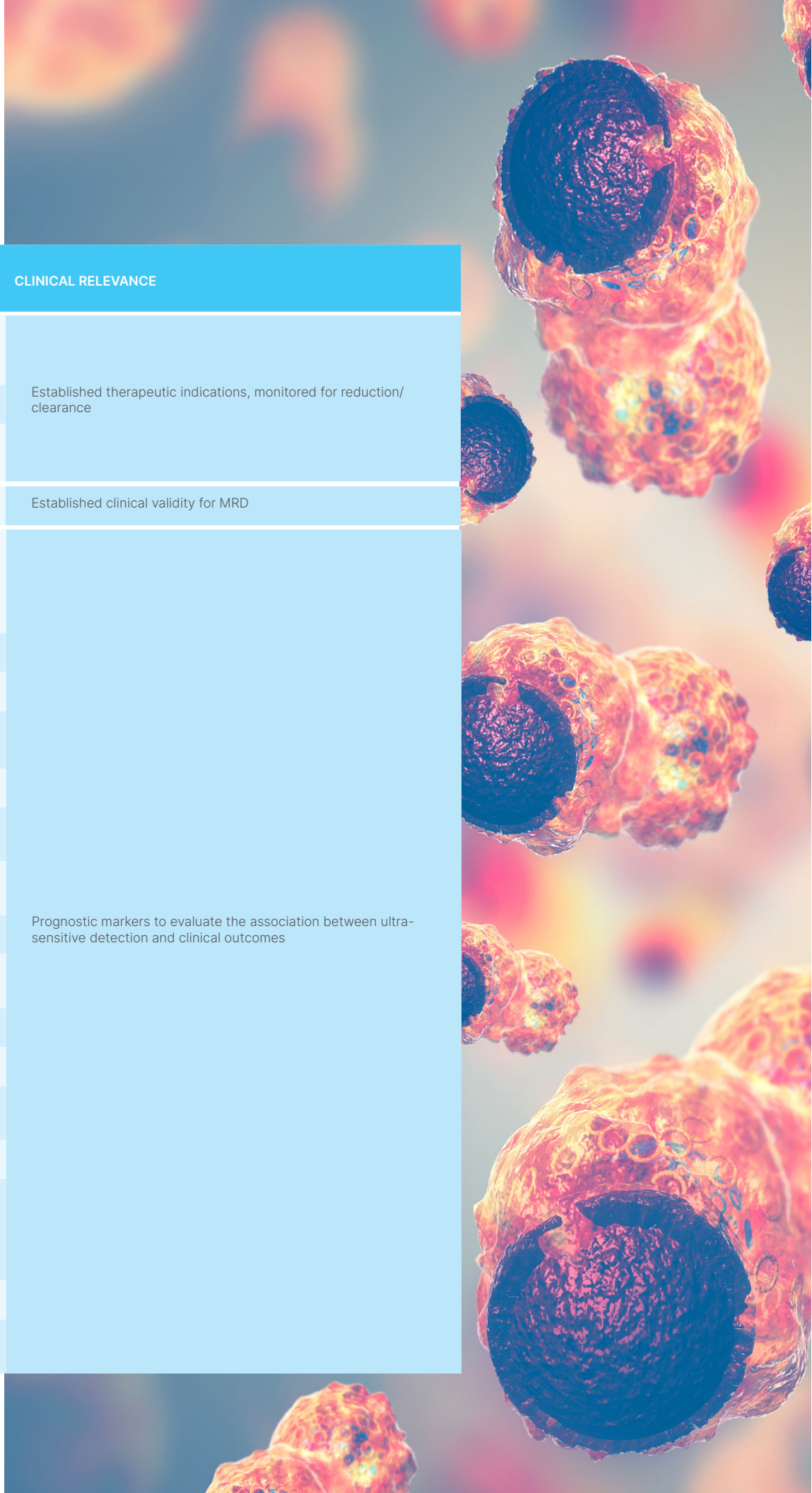
In addition to identifying biomarkers with an established therapeutic indication, such as IDH1/2 and FLT3, or clinical validity, such as NPM1, AML-MRD-SEQ also interrogates other clinically relevant markers to evaluate the robust association between ultra-sensitive detection and clinical outcomes.

Enabling discoveries in biopharma

By offering reliable detection of molecular MRD with 50 to 100 times greater sensitivity versus pan-heme NGS tests, AML-MRD-SEQ can accelerate clinical development of novel therapeutics leading to more reliable information on which to base important decisions for AML patients.[3,5,6]

AML-MRD-SEQ is CLIA-validated and joins the portfolio of ultra-sensitive Plasma-Safe-SeqS tests available through Sysmex Inostics' CLIA lab service in Baltimore, Maryland.

GENE	GENE REGIONS COVERED (AMINO ACIDS)	CLINICAL RELEVANCE
FLT3	438-461, 479-493, 582-605, 663-684, 829-845	Established therapeutic indications, monitored for reduction/ clearance
IDH1	127-135, 256-281	
IDH2	135-154, 171-178, 310-322	
NPM1	260-275, 283-288	Established clinical validity for MRD
BCOR	333-358, 395-421, 577-605, 822-846,1477-1489, 1513-1527, 1533-1555,1636-1658	Prognostic markers to evaluate the association between ultra-sensitive detection and clinical outcomes
BRAF	582-604	
CEBPA	61-86, 296-321	
GATA2	301-329, 350-379, 382-400	
JAK2	607-620	
KIT	188-201, 412-425, 550-564, 808-828	
KRAS	12-36, 57-76, 110-117, 141-148	
NRAS	1-17, 55-70	
PRPF8	674-692, 1574-1595, 1597-1611, 1743-1769	
PTPN11	58-72	
SETBP1	856-877	
SF3B1	622-644, 661-677, 699-722, 833-841	
SRSF2	75-95	
TP53	10-24, 26-32, 49-77, 99-125, 126-141, 151-179, 192-219, 225-248, 262-285, 297-306, 308-331, 332-360, 368-383	
U2AF1	30-40, 146-159	
ZRSR2	47-63, 69-71, 118-133, 171-185, 287-311	



AML-MRD-SEQ: A new solution to enable discoveries in biopharma

AML-MRD-SEQ is a CLIA-validated liquid biopsy solution for the identification of gene mutations associated with AML MRD. Applying ultra-sensitive Plasma-Safe-SeqS technology to the detection of MRD as a primary endpoint for hematology-oncology trials allows for accelerated clinical development timelines, cost savings, and improved trial outcomes.

> **Given the robustness of the association of MRD with long-term outcomes across studies, use of MRD status as an eligibility criterion and/or an end point in clinical trial design could lead to more efficient assessment of the efficacy of new drugs and combination therapies in AML.[7]**
>
> - JAMA Oncology

Sample requirements and processing time

Sample specification

2×10mL tubes of whole blood

(BONE MARROW OPTION COMING SOON)

Pre-analytical sample handling

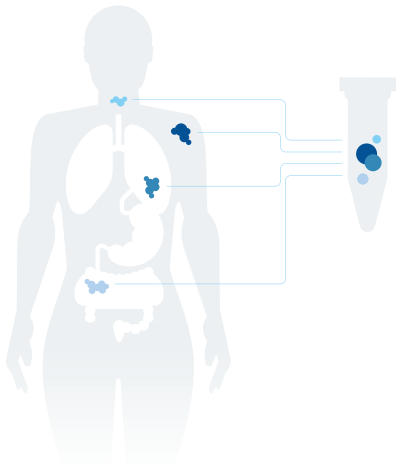
Sysmex Inostics' validated shipping kits and temperature loggers ensure sample stability

Result turnaround time

7 – 10 business days

PLASMA-SAFE-SEQS TECHNOLOGY

Ultra-sensitive across clinically relevant genomic regions



Sysmex Inostics' Plasma-Safe-SeqS technology offers highly sensitive mutation detection across the most clinically relevant gene targets. Plasma-Safe-SeqS is designed specifically for the measurement of ctDNA and panels are developed for particular clinical intended uses where high sensitivity detection may provide unique insights and improve outcomes.

Demonstrating equivalent performance to OncoBEAM digital PCR, Plasma-Safe-SeqS is 10 times more sensitive than other liquid biopsy NGS methods which allows clinical trial sponsors to accelerate trial enrollment and evaluate biomarker hypotheses with greater power.

Have a question about AML-MRD-SEQ?

Please visit www.sysmex-inostics.com/contact-us.

REFERENCES

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5 https://www.illumina.com/content/dam/illumina-marketing/documents/products/datasheets/datasheet-trusight-myeloid.pdf

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7 Short NJ, et al. Association of Measurable Residual Disease With Survival Outcomes in Patients With Acute Myeloid Leukemia: A Systematic Review and Meta-analysis. JAMA Oncol. 2020 Dec 1;6(12):1890-1899.

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