

Haematologica Publication Highlights Earlier Leukemia Relapse Detection with FusionMRD™ developed by Pairidex

Novel blood-based MRD testing detects treatment failure weeks to months earlier than standard of care testing.

ST. LOUIS, MO, UNITED STATES, September 22, 2026 /EINPresswire.com/ -- [Pairidex](#) Inc., a leader in personalized disease monitoring for fusion-driven blood cancers, today announced a peer-reviewed study in [Haematologica](#) on personalized, blood-based digital PCR testing in patients with KMT2A-rearranged acute leukemia. In all cases where patients relapsed and samples were banked during treatment, the test detected disease weeks to months before standard-of-care testing. The study was led by Andrew L. Young, MD, PhD, co-founder and Chief Scientific Officer of Pairidex and Assistant Professor of Medicine in the Division of Hematology at Washington University School of Medicine in St. Louis. It used technology that is exclusively licensed from Washington University to Pairidex and now offered as [FusionMRD™](#).

Measurable residual disease (MRD) testing is central to assessing relapse risk in acute leukemias, but current methods have gaps. As the publication notes, 10–20% of acute myeloid leukemia (AML) patients who test negative by flow cytometry-based MRD testing relapse within a few months. PCR-based molecular assays are highly sensitive but only exist for a handful of genetic alterations. KMT2A rearrangements illustrate the problem. This gene can fuse with dozens of different partners, so no single standardized assay covers them all. Hundreds of other oncogenic fusions present the same challenge, leaving many fusion-driven leukemia patients without a molecular MRD assay.

This study builds upon the initial proof-of-principle for personalized digital PCR gene fusion MRD detection previously published in the Journal of Molecular Diagnostics. Through an observational clinical study, the researchers designed and verified personalized gene fusion assays for 20 patients and performed MRD testing on 133 bone marrow or peripheral blood samples banked during or after treatment. Results using the personalized digital PCR approach were compared against standard-of-care testing.

Key findings:

- Earlier detection. Seven patients with serial samples during initial therapy experienced treatment failure. In all seven, the test detected fusion transcripts before standard testing or clinical progression did, with a median lead time of 92 days (range, 36–145).

- Disease missed by flow cytometry. In one patient, the digital PCR blood test was positive 106 days before a bone marrow biopsy detected recurrence by FISH. A biopsy two weeks earlier had been negative by flow cytometry MRD testing.
- Long-term surveillance. In one patient, the test detected recurrence in the blood more than two years after diagnosis and months before clinical relapse.
- Blood mirrored bone marrow. Fusion transcript levels in paired blood and marrow samples were highly concordant ($R^2 = 0.99$).
- Reassuring negative results. Patients whose fusion transcripts became undetectable and stayed negative did not relapse during follow-up.

The study was observational: results were not returned to patients or physicians, and larger studies are needed to determine whether earlier detection improves outcomes.

“MRD testing in AML typically happens at only a few set timepoints and uses testing methods that can miss low level disease, so recurrence is often caught when it’s clinically apparent and the patient is too sick to tolerate an escalation in therapy,” said Young. “This approach extends the paradigm already accepted for molecular MRD monitoring to patients with gene fusion-driven leukemia who previously did not have a molecular assay to track their disease.”

“These peer-reviewed results are an important milestone for the technology behind FusionMRD™. Our focus now is putting FusionMRD™ into the hands of clinicians and continuing to build evidence supporting its use in monitoring patients with fusion-driven leukemia,” said Paul Kortschak, CEO of Pairidex.

About FusionMRD™

FusionMRD™ is a personalized digital PCR test that monitors a patient's specific leukemia fusion over time, built on the technology used in this study. It is a laboratory-developed test performed in Pairidex's CLIA-certified laboratory and has not been cleared or approved by the FDA. Learn more at [Pairidex.com](https://pairidex.com).

Publication

Noor A, Cao X, Cox MJ, et al. Non-invasive personalized fusion measurable residual disease detection in acute myeloid leukemia using digital PCR. *Haematologica*. Published online July 30, 2026. <https://doi.org/10.3324/haematol.2026.301243>

Disclosure

Dr. Young and co-author Grant A. Challen, PhD, are co-founders and shareholders of Pairidex. Washington University has licensed this technology to Pairidex. Washington University has licensed this technology to Pairidex and may benefit financially from its commercialization.

Learn more about Pairidex Inc.

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