

# PML::RARA Detection by RT-PCR, Quantitative

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Testing for *PML::RARA* fusion transcripts may be useful as part of the evaluation of suspected acute promyelocytic leukemia.<sup>1</sup> *PML::RARA* testing can be used to monitor for minimal residual disease (MRD).<sup>1</sup> These tests use reverse transcription polymerase chain reaction (RT-PCR) to detect if a fusion transcript is present.

## Genetics

*PML::RARA* fusion type A (short, S-form, bcr-3), type B (long, L-form, bcr-1), and type B variant (variable, V-form, bcr-2)

## Test Interpretation

### Analytic Sensitivity/Specificity

Analytic specificity: >99% above the limit of quantitation ( $\geq 0.0005$  normalized copy number [NCN])

Limit of quantitation:  $\geq 0.0005$  NCN

Limit of detection: 1/10,000 t(15;17) positive cells

### Limitations

- This assay does not identify which transcript is detected.
- Levels can only be reliably compared if using the same laboratory and same sample type each time.
- This assay will only detect *PML::RARA* fusions and will not detect fusions from the less common *RARA* fusion gene partners or rare variants not included in the isoforms tested.

### References

1. National Comprehensive Cancer Network. [NCCN Clinical Practice Guidelines in Oncology: acute myeloid leukemia](#). Version 3.2026. Updated Nov 2025; accessed Jan 2026.

## Featured ARUP Testing

[PML::RARA Detection by RT-PCR, Quantitative 3018922](#)

**Method:** Quantitative Reverse Transcription Polymerase Chain Reaction

Use to detect and quantitate *PML::RARA* fusion transcripts in individuals with acute promyelocytic leukemia.

Use to monitor minimal residual disease (MRD) in patients with a known history of *PML::RARA* fusion transcripts and assess the risk of disease relapse.

This test detects isoforms bcr1, bcr2, and bcr3; it does NOT identify which transcript is detected.