

Identification of a novel tyrosine kinase inhibitor for acute myeloid leukemia

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Acute myeloid leukemia (AML) is a cancer of myeloid stem cells that develops in both adult and pediatric populations. Mutations that cause hyperactivation of the FMS-like tyrosine kinase 3 (FLT3) are commonly found in AML, and several clinical trials are testing FLT3 inhibitors. However, resistance to FLT3 inhibitors can develop, highlighting the need for additional approaches to treating AML.

Douglas Graham of the University of Colorado and colleagues at the University of North Carolina and UCSF report in *JCI Insight* the development of a new drug that targets both resistant tumors and FLT3-independent AML. This research group previously documented that the receptor [tyrosine kinase](#) MERTK is elevated in the majority of acute leukemias.

They now show in culture and in preclinical models that the newly developed compound MRX-2843 exerts antitumor effects. Using a xenograft model in which patient-derived AML cells were injected into mice, they found that MRX-2843 treatment improved survival, even in cases of tumors resistant to the FLT3 inhibitor quizartinib.

Collectively, this study provides rationale for further exploring the clinical utility of MRX-2843.

More information: Katherine A. Minson et al. The MERTK/FLT3 inhibitor MRX-2843 overcomes resistance-conferring FLT3 mutations in acute myeloid leukemia, *JCI Insight* (2016). [DOI:](#)

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