Improving models of chronic lymphocytic leukemia

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Chronic lymphocytic leukemia (CLL) is a common form of adult leukemia that results in the progressive expansion of abnormal lymphocytes. The cell type that gives rise to CLL is still unclear, though evidence suggests that a subset of immature B cell lymphocytes is transformed during development. Because of the heterogeneity of this cancer, it has not been possible to create a mouse model that faithfully recapitulates all aspects of this disease.

In this issue of *JCI Insight*, Nicholas Chiorazzi and colleagues at the Feinstein Institute for Medical Research sought to understand a model of CLL in which patient cancer cells are transplanted into immunocompromised mice. They previously showed that patient cells initially engrafted into mice and mimicked the disease, but the engraftment did not persist long term. In this study, they show that human malignant B cells from CLL patients differentiate into antibody secreting plasma cells in their murine model in the presence of patient-derived T cells.

Their findings reveal why cancerous cells are not maintained in their mouse model and suggest the possibility that therapies promoting differentiation could merit further exploration for CLL.

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