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### Expression of immunoglobulin gamma heavy chain gene in acute myeloid leukemia

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Expression of immunoglobulin (Ig), a marker characteristic of B-cells, has been reported in epithelial cells and has been suggested to play a role in their survival and growth. We assessed the frequency and level of Ig gamma heavy chain (IgG) expression in acute myeloid leukemia (AML) and found that IgG was expressed at a high frequency and level in AML cell lines and primary myeloblasts, but not in monocytes or neutrophils from patients with non-hematopoietic neoplasms or healthy controls. AML-derived IgG had the same molecular weight as B-cell-derived IgG and was secreted. We further detected IgG V<sub>H</sub>DJ<sub>H</sub> transcripts in AML cell lines and sorted primary myeloblasts, confirming that IgG expression was indeed produced by AML cells. AML-derived IgG gene rearrangements showed evidence of somatic hyper mutation of the variable (V) gene segments and restricted (AML cell lines) or biased (primary myeloblasts) V usage. Anti-human IgG reduced cell viability and induced apoptosis in AML cell lines. Although the function of the AML-derived IgG is unclear, our findings suggest that AML-derived IgG may be a novel AML-related gene that contributes to leukemogenesis and AML progression. AML-derived IgG may serve as a useful molecular marker for monitoring minimal residual disease or designing target therapy.

#### Biography

C C Yin has received her MD from Beijing Medical University and PhD from the University of Wisconsin-Madison. She is currently an Associate Professor in the Department of Hematopathology at the University of Texas MD Anderson Cancer Center. In addition to clinical responsibilities on the leukemia, lymphoma and molecular diagnostic services, she has been actively participating in multiple research projects in the molecular genetic abnormalities in leukemia and lymphoma, which has led to over 100 research papers and over 20 book chapters.

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