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Hematopoiesis News 6.03 January 27, 2015



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### TOP STORY

#### Genetic Engineering of Hematopoietic Stem Cells to Generate Invariant Natural Killer T Cells

Researchers report a new method to generate large numbers of invariant natural killer T (iNKT) cells in mice through T-cell receptor (TCR) gene engineering of hematopoietic stem cells (HSCs). They show that iNKT TCR-engineered HSCs could generate a clonal population of iNKT cells. [*Proc Natl Acad Sci USA*]

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### PUBLICATIONS (Ranked by impact factor of the journal)

#### MOZ Regulates B Cell Progenitors and, Consequently, Moz Haploinsufficiency Dramatically Retards MYC-Induced Lymphoma Development

The histone acetyltransferase MOZ (MYST3, KAT6A) is the target of recurrent chromosomal translocations fusing the MOZ gene to *CBP*, *p300*, *NCOA3* or *TIF2* in particularly aggressive cases of acute myeloid leukemia. Scientists report the role of wild-type MOZ in regulating B cell progenitor proliferation and hematopoietic malignancy. [*Blood*] [Abstract](#)

#### Epigenomic Analysis of the HOX Gene Loci Reveals Mechanisms that May Control Canonical Expression Patterns in AML and Normal Hematopoietic Cells

Investigators analyzed RNA sequencing data from 179 primary acute myeloid leukemia (AML) samples and normal hematopoietic cells to understand the range of expression patterns in normal versus leukemic cells. HOX expression in AML was restricted to specific genes in the HOXA or HOXB loci, and was highly correlated with recurrent cytogenetic abnormalities. [*Leukemia*] [Abstract](#)

#### Interplay of H2A Deubiquitinase 2A-DUB/Mysm1 and the p19<sup>ARF</sup>/p53 Axis in Hematopoiesis, Early T-Cell Development and Tissue Differentiation

To explore the interplay of histone H2A deubiquitinase Myb-like SWIRM and MPN domain containing1 (2A-DUB/Mysm1) with the p53 axis in the sequential differentiation of mature lymphocytes from progenitors, scientists systematically analyzed hematopoiesis and early T-cell development using Mysm1<sup>-/-</sup> and p53<sup>-/-</sup> Mysm1<sup>-/-</sup> mice. [*Cell Death Differ*] [Full Article](#)