

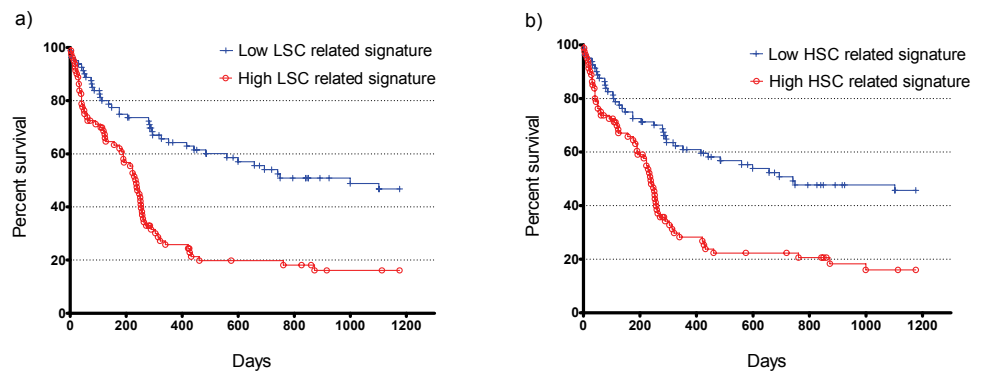
Leukemia and Hematopoietic Stem Cell Signatures for Predicting Survival of Patients Having Acute Myeloid Leukemia

Overview of Technology:

Normal hematopoiesis and acute myeloid leukemia (AML) are organized as hierarchies with stem cells, which possess extensive self-renewal and proliferative capacity, at the apex. Although there is definitive evidence from experimental models for the existence of leukemic stem cells (LSC) in some human leukemias, the relevance of LSC to human disease progression is still lacking. While chemotherapeutic treatment of AML patients typically results in disease remission, the majority of patients will eventually relapse and succumb to the disease, indicating that residual LSC are not eliminated by current treatment.

The researchers have identified clinically significant novel leukemia and hematopoietic stem cell signature expression profiles derived from 25 functionally validated human leukemia stem cell populations and 6 normal hematopoietic stem cell populations.

Figure: Expression of stem cell-related signatures predicts overall survival. The median expression of a) the 25 probe LSC signature or b) the 225 probe HSC signature was determined in 160 cytogenetically normal AML samples and used to stratify the patients into two groups of 80. All the patients had been treated with intensive double-induction therapy and consolidation chemotherapy. Expression was scaled to 0 for each probe. A Kaplan-Meier plot was generated and statistical significance determined by log-rank test.



Related Publication:

51st ASH annual meeting, 2009.

Patent:

Provisional patent application - Filed 4 December 2009

Inventors:

John Dick, Kolja Eppert, Erich Lechman, Levi Waldron, Igor Jurisica, Mark Minden, Katsuto Takenaka, Jayne Danska, Björn Nilsson and Benjamin Ebert

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