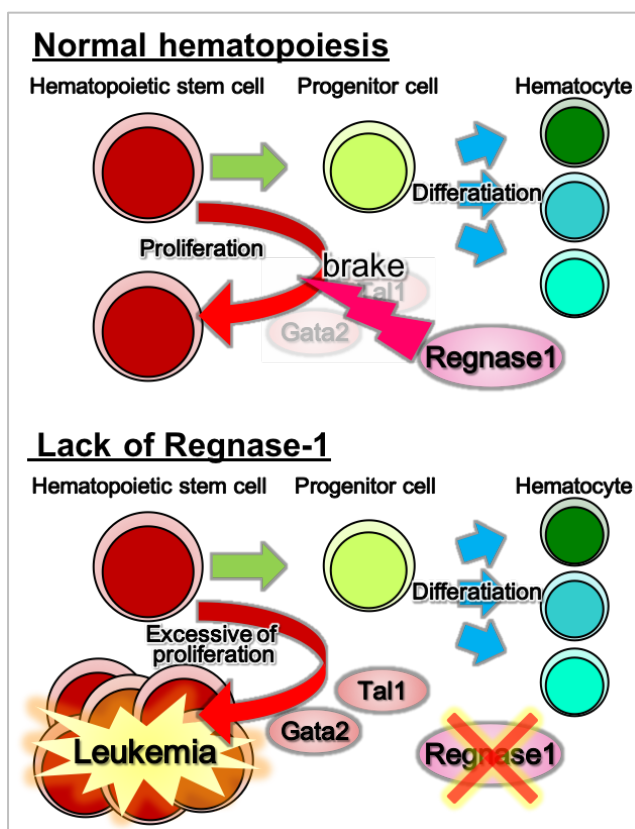


## Regnase-1-mediated post-transcriptional regulation is essential for hematopoietic stem and progenitor cell homeostasis

The balance between self-renewal and differentiation of hematopoietic stem and progenitor cells (HSPCs) maintains hematopoietic homeostasis, failure of which can lead to hematopoietic disorder. HSPC fate is controlled by signals from the bone marrow niche resulting in alteration of the stem cell transcription network. Regnase-1, a member of the CCCH zinc finger protein family possessing RNase activity, mediates post-transcriptional regulatory activity through degradation of target mRNAs. The precise function of Regnase-1 has been explored in inflammation-related cytokine expression but its function in hematopoiesis has not been elucidated. Nobuyuki Takakura (Signal Transduction, IFRc/RIMD) and his research group show that Regnase-1 regulates self-renewal of HSPCs through modulating the stability of Gata2 and Tal1 mRNA. In addition, they found that dysfunction of Regnase-1 leads to the rapid onset of abnormal hematopoiesis. Thus, the data reveal that Regnase-1-mediated post-transcriptional regulation is required for HSPC maintenance and suggest that it represents a leukemia tumor suppressor.



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