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Haematopoietic stem cells

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The transcription factor encoded by the stem cell leukemia SCL/tal-1 gene is essential for the embryonic development of haematopoietic stem cells (HSC). In an Advanced Online Publication in Nature Mikkola *et al.* describe analysis of mice with a conditional deletion of the *SCL/tal-1* gene, generated to assess the factor's role in adult haematopoiesis (*Nature* 19 January 2003, doi;10.1038/nature01345). Mice containing a *loxP*-flanked *SCL/tal-1* allele were bred with the mxCre strain in which Cre protein expression can be induced by polyI-polyC. Deletion of the *SCL/tal-1* gene in adult mice did not affect the differentiation or the maintenance of myeloid or lymphoid lineages. Bone-marrow transplantation experiments demonstrated that *SCL/tal-1* gene deletion did not affect contribution to all haematopoietic organs. The authors conclude that "loss of *SCL/tal-1* does not seem to impair considerably HSC properties, including engraftment, self-renewal and multipotency." These results suggest that transcription factors required for HSC genesis (such as *SCL/tal-1*) may differ from those required for long-term repopulation and multipotency in adults.

References

1. Absence of blood formation in mice lacking the T-cell leukaemia oncoprotein tal-1/SCL.

2. *Nature*, [http://www.nature.com]