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B-lymphocyte lineage genes

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The transcription factors encoded by the [E2A gene](#) are critical for the initiation of B-cell development in the bone marrow. In the early Edition of the [Proceedings of the National Academy of Sciences](#), Greenbaum and Zhuang report the [identification of target genes regulated by E2A in lymphoid cells](#). They combined an *in vivo* murine gene-tagging approach with a chromatin immunoprecipitation (ChIP) assay. Mice were generated that carry a dual affinity-tagged *E2A* knock-in allele. The fusion protein had no affect on lymphoid development, but provides a powerful tool for immunoprecipitation analysis. There was a selective enrichment of known gene targets implicated in B-cell lineage differentiation. Greenbaum and Zhuang cloned immunoprecipitated DNA fragments and were able to identify novel E2A targets. This is the first example of the use if an *in vivo* murine gene-tagging approach to isolate target genes of an endogenously expressed transcription factor.

References

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