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## Editing the immune system

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B lymphocytes that produce antibodies recognizing self antigens are tolerized by a process of **clonal selection**, which involves clonal deletion, anergy and a gene-recombination event called receptor editing. In the February 23 *Science*, Casellas *et al.* describe a model mouse system for investigating the importance of receptor editing (*Science* 2001, **291**:1541-1544). They generated a polymorphic **immunoglobulin kappa allele** by replacing the mouse kappa constant (mCkappa) region with the human sequence (hCkappa). Flow cytometry and mRNA analysis allowed them to monitor receptor editing in various genetic crosses. Casellas *et al.* provide evidence for extensive editing (about 25% of immunoglobulin light chains on the surface of B cells). Furthermore, they demonstrate that B cells which are undergoing editing are specifically delayed (for at least two hours) in the small pre-BII-cell stage during development.

## References

1. Glimpses into the balance between immunity and self-tolerance.
2. *Science*, [<http://www.sciencemag.org>]
3. Supplementary data for *Science* 2001, 291:1541-1544., [<http://www.sciencemag.org/cgi/content/full/291/5508/1541/DC1>]