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T-cell switch

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The reciprocal expression of the two co-receptors CD4 and CD8 define two major subsets of T lymphocytes in the peripheral immune system, namely helper and cytotoxic T cells. In the July 11 *Nature*, Chi *et al.* define a role for the SWI/SNF-like BAF chromatin-remodelling complexes in regulating the expression of the *CD4* and *CD8* genes (*Nature* 2002, 418:195-199). Chi *et al.* created transgenic mice expressing mutant forms of the HMG protein BAF57 that disrupt the function of the BAF complex; they found that disruption of BAF function impaired both *CD4* silencing and *CD8* activation in the thymus. Crossing the BAF mutant mice with mice lacking the *Brg* gene, encoding a catalytic subunit of the BAF complex, enhanced the *CD8* expression defects without affecting *CD4* silencing. Chi *et al.* go on to show that the BAF complex binds to the characterized *CD4* silencer element. Thus, mammalian SWI/SNF complexes appear to be functionally linked to lineage differentiation and T-cell development.

References

1. The regulation of CD4 and CD8 coreceptor gene expression during T cell development.
2. *Nature*, [<http://www.nature.com>]
3. When the SWI/SNF complex remodels...the cell cycle.