

PublisherInfo		
PublisherName	:	BioMed Central
PublisherLocation	:	London
PublisherImprintName	:	BioMed Central

Reverse evolution

ArticleInfo		
ArticleID	:	4715
ArticleDOI	:	10.1186/gb-spotlight-20030306-02
ArticleCitationID	:	spotlight-20030306-02
ArticleSequenceNumber	:	67
ArticleCategory	:	Research news
ArticleFirstPage	:	1
ArticleLastPage	:	2
ArticleHistory	:	RegistrationDate : 2003-3-6 OnlineDate : 2003-3-6
ArticleCopyright	:	BioMed Central Ltd2003
ArticleGrants	:	
ArticleContext	:	130594411

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The process of speciation (when one species splits into two distinct species that can no longer mate efficiently) takes thousands of years, and the underlying mechanisms are therefore difficult to investigate in the laboratory. In the March 6 *Nature*, Delneri *et al.* describe experiments designed to reverse the process of speciation using genomic engineering in yeast (*Nature* 2003, **421**:952-956). The *Saccharomyces 'sensu stricto' yeasts* comprise six species and interspecies matings produce sterile hybrids. The *S. cerevisiae* lab strain HY73 and the *S. mikatae* natural isolate IFO1816 have similar genomes that differ by a reciprocal chromosomal translocation. Delneri *et al.* tested the role of this translocation and the importance of genomic collinearity in reproductive isolation. They engineered the HY73 chromosomes so that they resembled those of IFO1816. The rearranged strain could now mate with IFO1816, demonstrating that re-establishing collinearity can reverse the process of speciation and reproductive isolation.

References

1. *Nature*, [<http://www.nature.com>]
2. Chromosomal evolution in *Saccharomyces*.