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Evolving without sex

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Arbuscular mycorrhizal fungi, which have lived for 400 million years without sex, present a challenge to evolutionary theories about the role of sex. In the December 13 *Nature* Gerrit Kuhn and researchers at the University of Lausanne, Switzerland, discuss genetic variation within Arbuscular mycorrhizal fungus individuals, which contain hundreds of inherited nuclei (*Nature* 2001, **414**:745-748). They carried out specific DNA-DNA FISH (fluorescent *in situ* hybridization) analysis to show that fungal spores contain a population of genetically different nuclei, and used phylogenetic analysis to conclude that the genetic variations are due to accumulation of mutations in a clonal genome and not to recombination. These results highlight the difficulties of applying standard evolutionary and population genetics theories to multi-genomic organisms.

References

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