

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

## Speciation induced by a bacterial symbiont?

ArticleInfo		
ArticleID	:	3974
ArticleDOI	:	10.1186/gb-spotlight-20010208-01
ArticleCitationID	:	spotlight-20010208-01
ArticleSequenceNumber	:	45
ArticleCategory	:	Research news
ArticleFirstPage	:	1
ArticleLastPage	:	2
ArticleHistory	:	RegistrationDate : 2001-02-08 OnlineDate : 2001-02-08
ArticleCopyright	:	BioMed Central Ltd2001
ArticleGrants	:	
ArticleContext	:	130592211

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The cytoplasmic symbiotic bacteria *Wolbachia* could induce host speciation in insects.

*Wolbachia* are symbiotic bacteria that live in the cytoplasm of an estimated 15-20% of all insect species, including wasps of the genus *Nasonia*. When two different species of *Nasonia* mate, hybrid offspring are suppressed. The presence of the bacteria causes an incompatibility between the sperm and egg of the two *Nasonia* species, resulting in the loss of the sperm's chromosomes upon fertilization.

Seth Bordenstein and colleagues at the [University of Rochester](http://www.rochester.edu), New York, report in the 8 February [Nature](http://www.nature.com/nature), that *Nasonia* species treated with antibiotics produced large numbers of hybrid offspring (*Nature* 2001, **409**:707-710). Furthermore, the hybrids were viable and fertile. Thus, the incompatibility caused by these bacteria is the principal mechanism for the reproductive isolation between *Nasonia* species, implicating *Wolbachia* in the early stages of speciation in this genus of wasps.

Given that *Wolbachia* also infect arachnids, isopods and nematodes, their role in promoting speciation could be quite common.

## References

1. University of Rochester, [<http://www.rochester.edu/>]
2. Bordenstein SR, O'Hara FP, Werren JH: *Wolbachia*-induced incompatibility precedes other hybrid incompatibilities in *Nasonia*. *Nature* 2001, 409:707-710, [<http://www.nature.com/nature/>]