


Bio 115 Cells & Evolution of Life

## Species and their Formation

### Intrinsic Mating Barriers



Start Audio Lecture!

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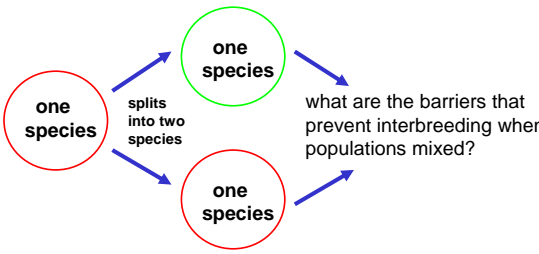
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## Barriers Between Species



one species splits into two species

one species

one species

what are the barriers that prevent interbreeding when populations mixed?

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## Prezygotic Mating Barriers

### Prevent formation of zygote:

- behavioral isolation
  - differences in behavior (timing, spatial, etc.) keep members of two populations from interbreeding
- mechanical isolation
  - physical differences prevent interbreeding
- gametic isolation
  - gametes of individuals are not compatible



Sperm

Egg

If gametes, such as sperm and egg cells, do not have compatible receptor molecules on their surfaces, fertilization is not possible. Gamete receptor molecules tend to differ between different species. <sup>3</sup>

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## Postzygotic Mating Barriers

### Problems occur after formation of zygote:

- hybrid zygote abnormality
  - hybrid zygotes fail to develop, or develop with severe abnormalities

- reduced hybrid fitness
  - hybrids may not survive as well, or may not be able to reproduce

- absence or sterility of one sex
  - individuals heterozygous for sex chromosomes carry deleterious alleles that are not masked



***Mules, hybrids of horses and donkeys, are viable but infertile.***

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