

H. pylori

Normal (produces enzyme) → Antibiotic applied → death

Mutant (produces NO enzyme) → survives → Continues to reproduce and produce offspring that resist antibiotics used to treat it.

7.8 Continuing Evolution

ENDURING UNDERSTANDING EVO-3 Life continues to evolve within a changing environment.

The Ice Age

During the Ice Age, many large mammals roamed the earth, filling out deep branches on the mammal Tree of Life.

The Present

Since then, all the largest species have been chopped off the mammal Tree by extinctions.

The Future?

Surviving species will have to diversify for millions of years to restore the missing evolutionary history and regrow the Tree of Life.

EVO-3.A Explain how evolution is an ongoing process in all living organisms.

- Populations of organisms continue to evolve.
 - Darwin's finches
 - Antibiotic resistance
 - Pesticide resistance

H. pylori

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Mutant (produces NO enzyme) → survives → Continues to reproduce and produce offspring that resist antibiotics used to treat it.

EVO-3.A Explain how evolution is an ongoing process in all living organisms.

- All species have evolved and continue to evolve
 - Genomic changes over time.
 - Continuous change in the fossil record.
 - Evolution of resistance to antibiotics, pesticides, herbicides, or chemotherapy drugs.
 - Pathogens evolve and cause emergent diseases.

Chemotherapy: Relapse vs Cure

Number of pathogen cells vs Time

Relapse: Death, Temp. stable and easy