

Darwin, natural selection and antibiotic resistance

Triple only

Who developed the theory of evolution by natural selection independently of Darwin?

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Name Darwin's book and the year it was published.

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Give one impact of Darwin and Wallace's ideas on modern biology.

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What is natural selection?

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What is evolution?

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What causes new alleles to appear in a population?

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Put natural selection in order: variation, alleles passed on, survival and reproduction, proportion increases.

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How do antibiotic-resistant bacteria emerge?

On the Origin of Species, 1859.

Alfred Wallace.

Organisms better adapted to their environment are more likely to survive and reproduce, passing on their alleles.

They explain the diversity of life and how species are related, and with genetics explain variation and the emergence of resistant organisms.

Mutation.

A change in the inherited characteristics of a population over many generations.

A mutation makes a bacterium resistant.
The antibiotic kills the others, so the resistant ones survive, reproduce and pass on the allele.

Variation, survival and reproduction of the better adapted, alleles passed on, proportion with the advantageous allele increases.

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What is the selection pressure in antibiotic resistance?

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Why does antibiotic resistance support Darwin's theory?

It shows natural selection happening:
variation, a selection pressure, survival of
the resistant, and inheritance of resistance.

The antibiotic.