

ISN'T NATURAL SELECTION THE SAME AS EVOLUTION?

Natural selection can only change the proportion of antibiotic resistant strains in a population, but it cannot produce antibiotic resistance, so it is not evolution.

To select something means to choose it from a group of pre-existing options. But choosing something is not the same as making something. In the same way natural selection has not caused bacteria to produce new genes for antibiotic resistance; it has merely forced the choosing of some already-existing genes in preference to others, on the basis of which are more able to survive in the prevailing environment. In other words, the already-resistant bacteria are selected by the antibiotics; they are not created (or evolved) by the antibiotics.

The process of natural selection is sometimes summarised as "survival of the fittest." However, **survival of the fittest does not explain arrival of the fittest.** Showing how plasmids help bacteria survive exposure to antibiotics does not explain where plasmids originally came from.

(For further examples of natural selection that are not evolution, see **page 7** on how to obtain a **FREE** copy of *Evidence from Biology, No. 1* in the Creation Research Evidence series.)

IF BACTERIA WERE CREATED, WHAT WOULD THE EVIDENCE BE?

If bacteria were specially created as the Book of Genesis says all living things were, then there will be two main types of evidence for us to observe:

1. They will show evidence of **design** in the way they function and in the way they interact with their environment.
2. They will show evidence that they reproduce **after their own kind**.

Bacteria by Design

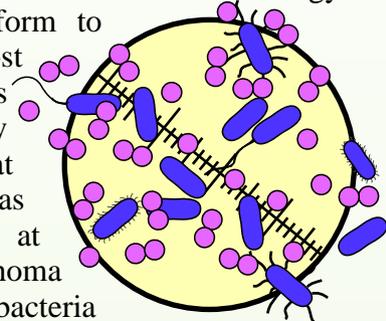
Design is the manipulation of matter and energy to achieve a structure or system that is more than just the materials that it is made from. For example a wooden table is more than just the wood it is made from. It functions as a table because it was designed and built by a carpenter who knows how a table functions. No-one looking at a wooden table would claim the wood made it, or that it came about by chance random processes knocking the wood around.

Some of the best evidence of design in bacteria is the way they carry out physical and chemical processes that are

beyond human engineering. Below are three examples of recently discovered evidence of intentional design from the Creation Research e-mail newsletter, with editorial comments (ED.COM.)

BACTERIA EXCEL AT THERMODYNAMICS,

according to a study reported in *Nature*, vol. 415, p454, 24 Jan 2002. The Laws of thermodynamics tell us that whenever energy is converted from one form to another some is always lost as waste heat. Engineers and physicists constantly strive to build machines that waste as little energy as possible. Microbiologists at the University of Oklahoma studied several anaerobic bacteria and found them to be extremely efficient using energy in their biochemical processes with very little energy wasted. They concluded "that bacterial metabolism can proceed at near thermodynamic equilibrium a condition often thought to be a biological impossibility."



ED.COM. Anaerobic bacteria are bacteria that can live without oxygen. They are considered to be primitive organisms that evolved before other forms of life. However, the above study shows there is nothing primitive about them. They show evidence of having been designed by a far better physicist or engineer than the human designers of any man made machinery. Bacteria work at "near thermodynamic equilibrium" because they were designed by God, who also designed the laws of thermodynamics.

GERM POWER FOR HYDROGEN ECONOMY,

according to Nature Science Update, (www.nature.com/nsu) 8 Oct 2001. Hydrogen is considered a "clean, green" fuel but it is difficult and expensive to produce by normal industrial chemical processes. However, some bacteria produce hydrogen as a by-product of converting carbon dioxide and nitrogen into complex organic molecules. Chemists at University of Illinois, Urbana-Champaign studied these bacteria and found they used an enzyme containing a core of iron and nickel atoms associated with other small molecules wrapped in a protein coat. The core is the active part of the molecule, so the scientists hope to build a molecule that acts like the bacterial core, but doesn't need the protein coat. If they succeed they will have a much cheaper method of producing hydrogen than at present.