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Corrections

Ananova:

DNA micro-computer unveiled

A new tiny biological device could lead to powerful computers driven by DNA.

Scientists in Israel have been showing off the DNA machine which is recognised as the world's smallest biological computing machine.

It works using molecules of DNA and an enzyme. A microlitre of solution containing the molecules could hold up to three trillion DNA computers.

Together they would have the capacity to perform 66 billion operations per second.

The breakthrough was made by Ehud Shapiro and colleagues at the Weizmann Institute in Rehovot.

In cells, DNA encodes programs that provide the instructions for building proteins.

Scientists have been trying to find ways of getting DNA to do the same in the form of a conventional computer.

The journal Proceedings of the National Academy of Sciences says the new system uses two complementary DNA molecules - an input molecule and a software molecule.

Both spontaneously bond together. The software molecule then directs the "hardware" - a DNA-cleaving enzyme - to cut a piece of the input molecule.

The enzyme, FokI, breaks two bonds in the input DNA double-helix, releasing the energy stored in these bonds as heat.

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In principle, a DNA computer using the same process could drive itself, the researchers said.

Story filed: 06:47 Tuesday 25th February 2003

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