

Scientists observe gene pulsing activity

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U.S. scientists say they've observed for the first time that gene expression can occur in the form of discrete "pulses" of gene activity.

Researchers at the Albert Einstein College of Medicine of Yeshiva University in New York, used microscopy techniques developed by Professor Robert Singer and colleagues that allow scientists to watch the behavior of a single gene in real time.

In observing a gene that plays a major role in how an organism develops, the Einstein researchers saw a phenomenon that, until now, has been indirectly observed and only in bacteria: pulses of transcription that turn on and off at irregular intervals.

Singer, the study's senior author, likens a gene to a thermostat: "Heating a home all the time would be wasteful and would overheat the house. The solution is a thermostat, which injects a little bit of heat when needed and then turns off. Similarly, a cell needs the gene to be turned on -- but too much activity at the wrong time can be a problem, so the solution is to have small bursts of activity."

The study appears in the journal *Current Biology*.

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