

## Video: Synthetic life? Scientists have created xenobots that move, remember, heal and work together in groups

Biologists and computer scientists from Tufts University and the University of Vermont have created novel, tiny self-healing living machines from frog cells (*Xenopus laevis*) that they call “Xenobots.” These can move around, push a payload, and even exhibit collective behavior in a swarm.

In an article titled “[A cellular platform for the development of synthetic living machines](#)” published in the journal *Science Robotics*, the researchers report a method for creating these of Xenobots from frog cells. This cellular platform can be used to study self-organization, collective behavior, and bioengineering and provide versatile, soft-body, living machines for applications in biomedicine and environmental biology.

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“In a frog embryo, cells cooperate to create a tadpole. Here, removed from that context, we see that cells can re-purpose their genetically encoded hardware, like cilia, for new functions such as locomotion. It is amazing that cells can spontaneously take on new roles and create new body plans and behaviors without long periods of evolutionary selection for those features.”

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[The] molecular memory in Xenobots could be harnessed to detect the presence of radioactive contamination, chemical pollutants, drugs, or a disease condition.

<https://geneticliteracyproject.org/wp-content/uploads/2021/04/Video3.mp4>

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