

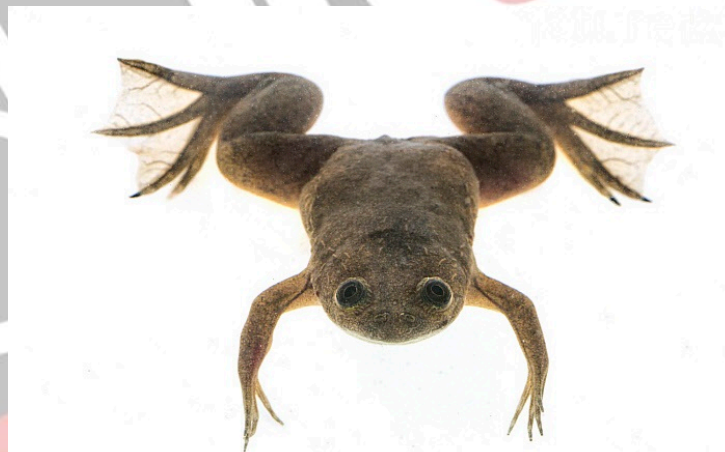


# Living Robots: Xenobots

## Why in News

Scientists in the United States have created the **world's first "living robots"** named "**xenobots**".

- The tiny robots have been built from the cells of the **African clawed frog**. Scientists have repurposed living cells scraped from frog embryos and assembled them into entirely new life-forms.
- The robots have been named after the species of **aquatic frog Xenopus laevis**, found across sub-Saharan Africa from Nigeria and Sudan to South Africa.
- While humans have been manipulating organisms for their benefit since at least the dawn of agriculture, and genetic editing has created a few artificial organisms in recent years, the latest research is a breakthrough because it designs, for the first time ever, "**completely biological machines from scratch**".
- The xenobots can move toward a target, perhaps pick up a payload (like a medicine that needs to be carried to a specific place inside a patient) — and heal themselves after being cut.
- Many useful applications of these living robots include searching out nasty compounds or radioactive contamination, gathering microplastic in the oceans, travelling in arteries to scrape out plaque, etc.



## Why Xenopus Laevis? //

- Xenopus is a genus of **African frogs** that are commonly known as the **African clawed frogs**.
- Two species of Xenopus are regularly used by biologists, **Xenopus laevis** and **Xenopus tropicalis**. Both species are fully aquatic, and are easy to maintain in captivity.
- Xenopus is a valuable tool because they are:
  - Hardy, fully aquatic and easy to maintain in the laboratory,
  - Produce eggs year-round,
  - Eggs are a reliable and flexible material for research,
  - Embryos are a **good model for vertebrate development**,
  - **Genetically similar to humans** thus a good model for human disease

[Source: IE](#)

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