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Pentagon Looks to Breed Immortal 'Synthetic Organisms,' Molecular Kill-Switch Included

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February 5, 2010 |

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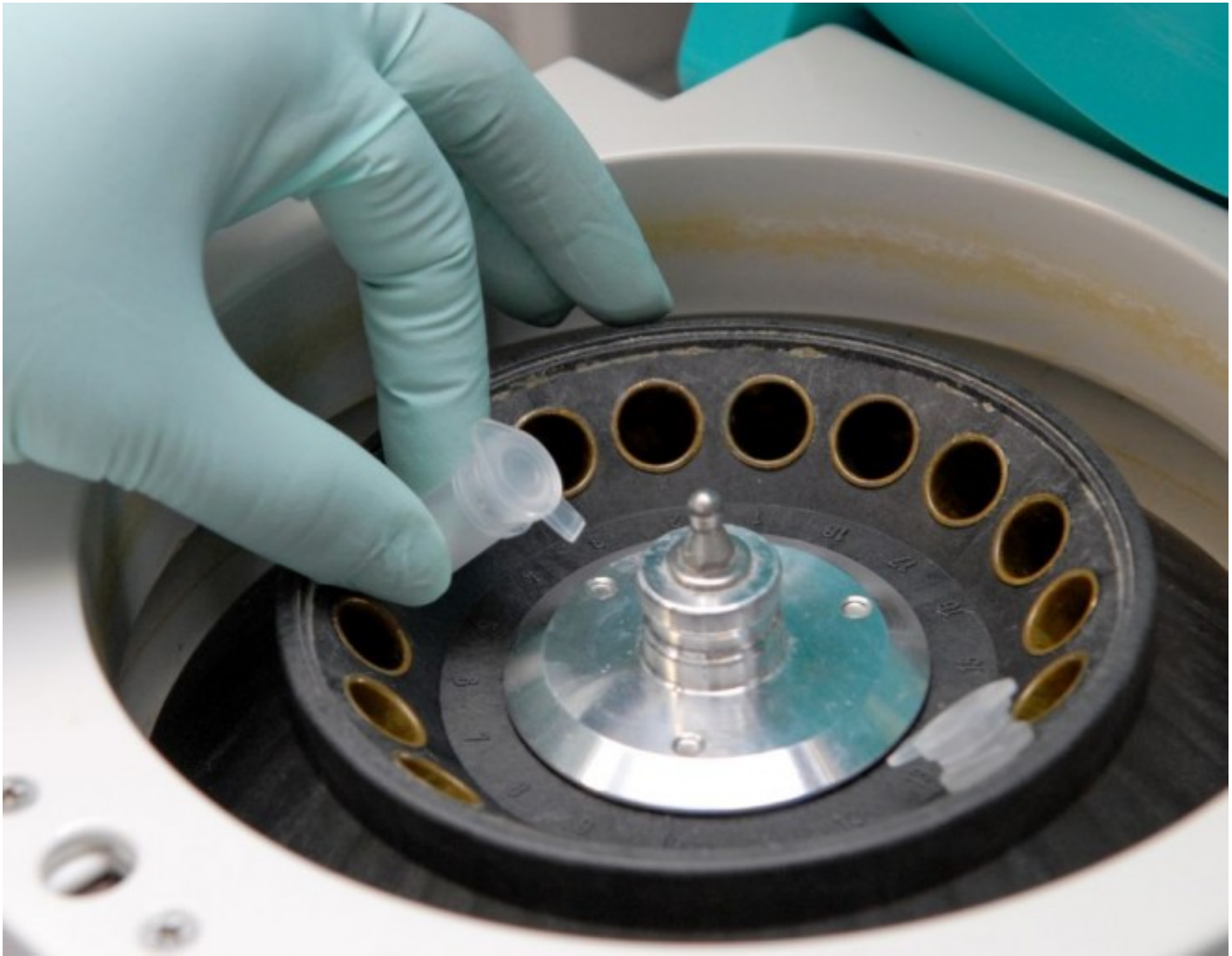
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The Pentagon's mad science arm may have come up with its most radical project yet. Darpa is looking to re-write the laws of evolution to the military's advantage, creating "synthetic organisms" that can live forever — or can be killed with the flick of a molecular switch.

As part of its [budget for the next year](#), Darpa is investing \$6 million into a project called BioDesign, with the goal of eliminating "the randomness of natural evolutionary advancement." The plan would assemble the latest bio-tech knowledge to come up with living, breathing creatures that are genetically engineered to "produce the intended biological effect." **Darpa wants the organisms to be fortified with molecules that bolster cell resistance to death, so that the lab-monsters can "ultimately be programmed to live indefinitely."**

Of course, Darpa's got to prevent the super-species from being swayed to do enemy work — so they'll encode loyalty right into DNA, by developing genetically programmed locks to create "tamper proof" cells. Plus, the synthetic organism will be traceable, using some kind of DNA manipulation, "similar to a serial number on a handgun." And if that doesn't work, don't worry. **In case Darpa's plan somehow goes horribly awry, they're also tossing in a last-resort, genetically-coded kill switch: *Develop strategies to create a synthetic organism "self-destruct" option to be implemented upon nefarious removal of organism.***

The project comes as Darpa also plans to throw \$20 million into a new synthetic biology program,

and \$7.5 million into “increasing by several decades the speed with which we sequence, analyze and functionally edit cellular genomes.”

Of course, Darpa’s up against some vexing, fundamental laws of nature — not to mention bioethics — as they embark on the lab beast program. First, they might want to rethink the idea of evolution as a random series of events, says NYU biology professor David Fitch. “Evolution by selection is *nota* random process at all, and is actually a hugely efficient design algorithm used extensively in computation and engineering,” he e-mails Danger Room.

Even if Darpa manages to overcome the inherent intelligence of evolutionary processes, overcoming inevitable death can be tricky. Just ask all the other research teams who’ve made stabs at it, trying everything from cell starvation to hormone treatments. Gene therapy, where artificial genes are inserted into an organism to boost cell life, are the latest and greatest in life-extension science, but they’ve only been proven to [extend lifespan](#) by 20 percent in rats.

But suppose gene therapy makes major strides, and Darpa does manage to get the evolutionary science right. They’ll also have a major ethical hurdle to jump. Synthetic biology researchers are already facing the same questions, as a [2009 summary](#) from the Synthetic Biology Project reports: The concern that humans might be overreaching when we create organisms that never before existed can be a safety concern, but it also returns us to disagreements about what is our proper role in the natural world (a debate largely about non-physical harms or harms to well-being).

Even expert molecular geneticists don’t know what to make of the project. Either that, or they’re scared Darpa might sic a bio-bot on them. “I would love to comment, but unfortunately Darpa has installed a kill switch in me,” one unnamed expert tells Danger Room.

Photo: VA.gov

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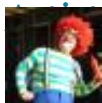
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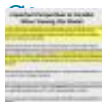
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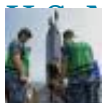
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Katie Drummond is a New York-based reporter at Danger Room, covering the wild world of military research, and a contributing editor at The Daily.

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Herballflavtony • a year ago

@openid-79849:disqus, my first though after reading your "defensive" comment was that you must work for these same type of people, or at least trying, then I clicked on your "name" and come to see that you ARE in fact studying the same stuff that would get you eventually in a position doing this same stuff. It all makes sense now.

See, I am not a scientifically inclined person, nor have I ever taken classes to teach me anything about it, but I have a very sharp sense of all things and can learn very quickly, and my mind works at a very fast rate, and when something doesn't sound "right", well then it doesn't sound right, and this to me, doesn't sound right. To create an "Invincible" organism, that defies the meaning of LIFE, as we were created by GOD. For man to literally create something that defeats GODS own design, that will be the fall of ALL mankind. They create an Organism that complex, who's to say it wont evolve on its own, then the "kill switch doesn't work"? I dont care how good these people are and how much testing they put to it, MAN is not perfect and scientist's ALWAYS screw up, even with the "Perfect" design.

You say that we have bacteria that live in us every day that are worse than that. Really? As far as I know

You say that we have bacteria that live in us every day that are worse than that. Really? As far as I know, our own immune system, along with medicine can KILL those harmful bacteria, and what is bacteria? Organism's. Is evolution real? Absolutely. So then can be evolution of a man made organism. What are organisms made of? Cells. What do Cell's do on an infinite level of their own? Multiply. And what does our body do when it is introduced to a new bacteria or organism? If it is bad, it fights it. If it is good, it accepts it. BUT, some bacteria can start good, bond with our cells and our body will accept it, but later down the road, it can turn and harm us, so who's to say that this won't do the same thing?

And also, what would happen if a "subject" or "test rat" bonded well with the organism, everything was a go for success, then they hit the kill switch to it, and instead of killing ONLY the man made organism, it also killed every natural cell it bonded with. It would kill the test subject. Now, would they have not expected that and go back to square one? Or would they consider that a success, as in, now, what ever and WHO ever has this "injected" into them/it, would be leaving the fate of their lives at the hands of the Government, who is already talking of population control, but not like the Government doesn't already have full control of us anyways. They all sleep in the same bed together, so why not, right?

Not only do we control weather, destroy everything in our path, create natural disasters, create disease AND medicine FOR those diseases, kill our neighbors, Government in the process of going for New World Order and one currency, so much other things, now we need to create an Invincible organism? I cant believe how much money is going into this when our COUNTRY is in a RECESSION! No one should be standing for this. This is a BAD IDEA and should be stopped immediately. NOTHING should be IMMORTAL!!!!

This is Man playing GOD, and when we start to play GOD, well, we aren't as perfect as GOD, so what we create ALWAYS backfires somewhere down the line. Either we destroy all of man kind with this type of Organism, or that will be the beginning of the end, a sign of a true apocalyptic end, or Armageddon as you will, when GOD himself takes control and brings man kind to an end. Its only a matter of time, and THIS is a sign of the beginning of the end.

12 ^ | 1 v • Share ›



Christina Kuhn • a year ago

I think this is, once again, a group of so-called scientists who are going to go and do something stupid that will backfire on all of mankind again. I mean, Men or man is just not happy unless they are trying to fix something that needs not to be fixed. Just leave this kind of stuff to the REAL God. The one of the entire universe...Jesus.

10 ^ | v • Share ›



Sidonio Ferreira • a year ago

This is not science. This is terrorism.

9 ^ | v • Share ›



shagbark • a year ago • parent

So, you think "terrorism" means "things I don't like"? And here I thought it had something to do with hurting people.

2 ^ | 1 v • Share ›



shagbark • a year ago

Wired, think before you write. This DARPA project is primarily about "computational methods for prediction of function based solely on sequence and structure of proteins". DARPA is not talking about making "living, breathing creatures". They're talking about making bacteria. You already have more dangerous bacteria living inside you, so stop worrying.

Second, comparing "increase[d] resistance to cellular death signals" to extending lifespan in mice shows you have no clue what you're talking about. Cells are already immortalized routinely in laboratories around the world. Also, this effort has nothing to do with gene therapy.

Third, there are no ethical issues. Unless you care deeply about the rights of bacteria. You probably ate a dead animal today that was raised in a boring and confined space and killed for your benefit. How about resolving that issue before you go ranting about the "ethical dilemmas" of bacterial research?

DARPA is one of the only agencies out there that is thinking deeply about how to improve our lives with science - so stop trying to think how you can make every project of theirs sound like something from a bad sci-fi movie.

6 ^ | v • Share ›



Aya • a year ago

Darpa brought us the Internet, and they will now (hopefully/potentially) bring us extreme advances in biological and medical science. I approve.

6 ^ | 1 v • Share ›
