

Targeting super bacteria with artificial intelligence yields ‘powerful’ discovery

We’re now facing the emergence of strains of super bacteria resistant to one or more antibiotics and an aging arsenal to fight them with. Gone unchallenged, an estimated 700,000 deaths worldwide due to drug resistance could rise to as many as 10 million in 2050.

Increasingly, scientists warn the tide is turning, and we need a new strategy to keep pace with the remarkably quick and boundlessly creative tactics of bacterial evolution.

But where the golden age of antibiotics was sparked by serendipity, human intelligence, and natural molecular weapons, its sequel may lean on the uncanny eye of artificial intelligence [to screen millions of compounds](#)—and even design new ones—in search of the next penicillin.

In [a paper](#) published [February 20] in the journal, *Cell*, MIT researchers took a step in this direction. The team says their [machine learning algorithm discovered](#) a powerful new antibiotic.

Named for the AI in 2001: *A Space Odyssey*, the antibiotic, halicin, successfully wiped out dozens of bacterial strains, including some of the most dangerous drug-resistant bacteria on the World Health Organization’s most wanted list. ...

“I think this is one of the more powerful antibiotics that has been discovered to date,” James Collins, an MIT professor of bioengineering and senior author told *The Guardian*.

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