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Technology News

NEWS

NTU Singapore scientists create grain-sized robots for drug delivery.



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Researchers at Nanyang Technological University, Singapore (NTU Singapore) have [developed tiny, grain-sized robots](#) controlled by magnetic fields, designed to deliver medicine directly to specific parts of the body. These soft robots could revolutionize medical treatments by improving how drugs are delivered, reducing side effects in the process.

The team behind this innovation comes from NTU's School of Mechanical and Aerospace Engineering (MAE), led by Assistant Professor Lum Guo Zhan. The robots can carry and release up to four different drugs in a programmable sequence.

"What was once sci-fi is now coming closer to reality," said Lum in a statement. "Traditional methods like injections may seem less efficient compared to sending a tiny robot to deliver the drug exactly where it's needed."



The robots are made from non-toxic materials and are highly flexible, enabling them to navigate through complex environments in the body. In laboratory tests, these robots moved across different sections and successfully released various drugs, proving their potential for precise, controlled drug delivery.

"This soft robot could be crucial for future cancer therapies, where multiple drugs need to be delivered with exact timing," said Research Fellow Yang Zilin, co-author of the study.

The researchers tested the robots in thick liquids that simulate human conditions, where they successfully released drugs over eight hours with minimal leakage.

"I foresee tiny robots like these replacing current methods for delivering medication inside the body," said Dr. Yeo Leong Litt Leonard, a neurosurgeon from the National University Hospital. "This is a medical advancement that is on the horizon."

The NTU team plans to refine their design, making these robots smaller and ready for testing in future treatments like brain and bladder cancer.

Delivering #medical drugs into the human body with a robot the size of a rice grain



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