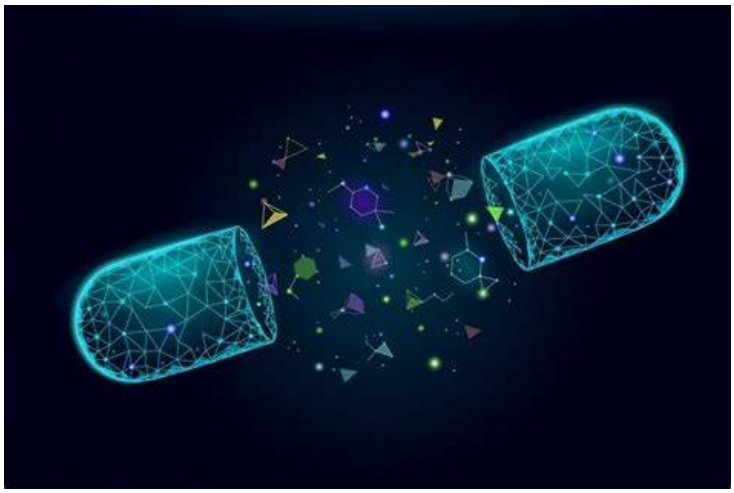
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ASIA EDITION

Singapore develops grain-sized soft robots for drug delivery

October 26, 2024 | News

Highly dexterous and reprogrammable drug-dispensing capabilities



A team of scientists at Nanyang Technological University (NTU), Singapore has developed grain-sized soft robots that can be controlled using magnetic fields for targeted drug delivery, paving the way to possible improved therapies in future.

The study is believed to be the first reported instance of miniature robots that can transport up to four different drugs and release them in reprogrammable orders and doses.

Compared to earlier small-scale robots which can only carry up to three types of drugs and cannot be programmed for release in order, the newly developed miniature robots offer precision functions that have the potential to significantly improve therapeutic outcomes while minimising side effects, said the research team.

The NTU team had previously developed magnetically controlled miniature robots capable of complex manoeuvres such as ‘swimming’ through tight spaces and gripping tiny objects.

The NTU research team is now looking to make their robots even smaller so that they could eventually be used to provide revolutionary treatments for conditions such as brain tumours, bladder cancer, and colorectal cancer. Before these tiny robots are deployed for such medical treatments, the NTU researchers aim to further evaluate their performance with organ-on-chip devices and animal models.