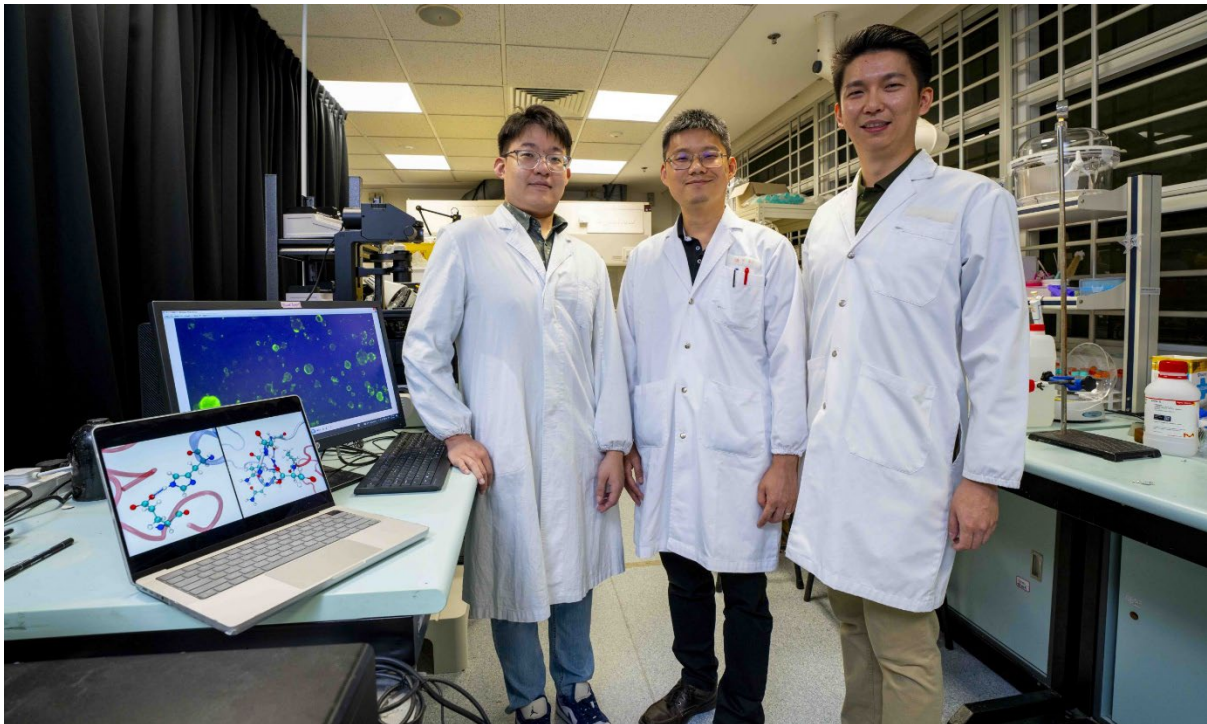




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NTU scientists develop revolutionary drug delivery system inspired by caterpillars



SINGAPORE: A team of scientists from Nanyang Technological University (NTU) has created a novel drug delivery system that draws inspiration from the natural world. Using the unique self-assembling properties of proteins found in moth caterpillars, the researchers designed nanosized capsules capable of encapsulating and delivering various pharmaceutical compounds.

The innovative approach taken by the NTU team capitalizes on the inherent properties of proteins from the tough outer layer of moth caterpillars, which have evolved to provide robust protection. After identifying these proteins, the scientists synthesized them in the lab to create the nanosized capsules.

According to the researchers, the process of self-assembly presents a cost-effective and environmentally friendly alternative to traditional methods of manufacturing nanostructures.

This technique could pave the way for more sustainable practices in the field of drug delivery and beyond.

In laboratory tests, the NTU team demonstrated that the nanocapsules, once filled with drugs, were readily taken up by cells, suggesting a promising application in biomedical contexts. This new delivery

system has the potential to transform drug delivery, gene therapy, and other critical areas of medicine.

The study was led by Assoc Prof Yu Jing of NTU's School of Materials Science and Engineering, who was aided by Dr Li Haopeng, research fellow from NTU's School of Materials Science and Engineering and Dr Qian Xuliang, research fellow from NTU's School of Mechanical and Aerospace Engineering.

The researchers said that their work shows that nature can provide solutions to some of the most complex problems in biomedical science. They are confident that mimicking the self-assembling properties of these proteins can help create versatile and efficient drug delivery systems that can be used for a wide range of applications.

The researchers are currently seeking a patent for their innovation, with their findings published in the prestigious scientific journal *Nature Nanotechnology*.

As the NTU scientists continue their research, observers anticipate that their work could lead to breakthroughs in the treatment of various diseases and open new pathways for personalized medicine. With further development, the nature-inspired drug delivery system could significantly impact healthcare, offering more precise and effective treatments to patients worldwide.

<https://theindependent.sg/ntu-scientists-develop-revolutionary-drug-delivery-system-inspired-by-caterpillars/>