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Pune scientists use nanovesicles for improved cancer drug delivery

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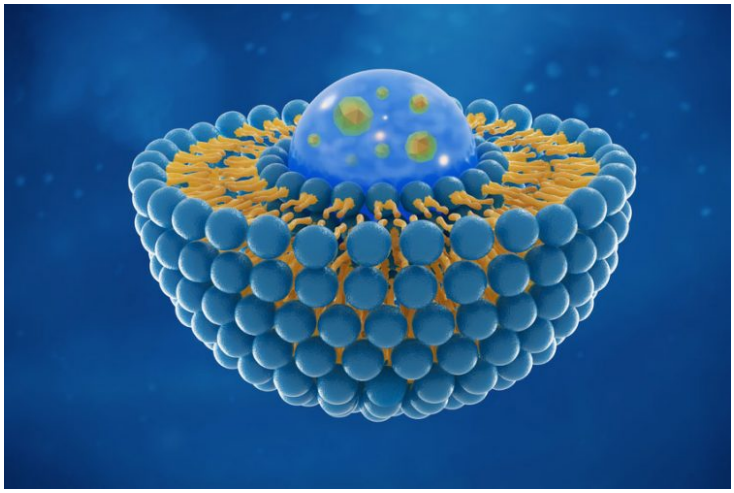

Researchers at the Indian Institute of Science Education and Research (IISER) Pune have been able to increase the uptake of anticancer drug Alisertib by breast cancer cells and achieve greater ability to restrict cancer cell growth.

The researchers encapsulated the poorly water-soluble anticancer drug Alisertib in polysaccharide nano-sized balls or vesicles. Better uptake of the drug when encapsulated meant lower concentration of the drug was sufficient to restrict cancer growth significantly better than the free drug.

According to the researchers, nanovesicles with the drugs loaded become water dispersible thus increasing the uptake by cancer cells. The team is currently working to make the nanovesicles even more specific to cancer cells. The drug-loaded nanovesicles are cleaved by esterase enzyme once inside the cell. In spite of being cleaved, the drug is released slowly in a controlled manner over 8-10 hours.