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Kolkata researchers design drug nanocarriers

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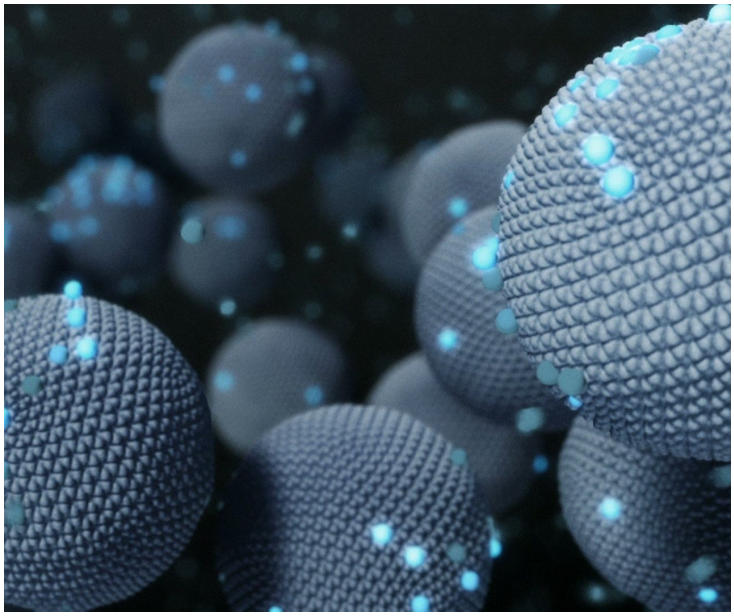

A group of researchers from CSIR-Indian Institute of Chemical Biology, Kolkata, has designed an efficient drug nanocarrier using gold nanoparticles coated with a simple organic molecule (porphyrin). The nanocarrier was found to effectively deliver the anti-tumour drug doxorubicin anti-tumour drug to the nucleus of the diseased cell and bring about programmed cell death.

The porphyrin molecule was found to be uniformly distributed on gold nanoparticles and the porphyrin–gold complex was stable. The complex without the drug showed no toxicity to healthy and cancerous cells.

Multidrug resistance is one of the major barriers in cancer cells, where the drug is quickly ejected out, reducing the effective drug concentrations within the cells and thus decreases its sensitivity.

The researchers are currently studying the pathways by which drugs can damage the DNA, and trying to design a system that can release the drug more efficiently.