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IIT team develops nanodots to fight cancer

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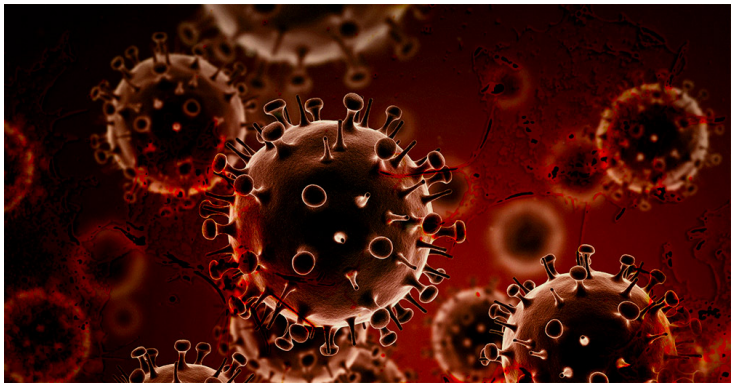

A group of scientists at the Indian Institute of Technology Roorkee has developed fluorescent carbon nanodots that can serve as theranostic i.e. therapeutic and diagnostic, agents for cancer. These nanosized carbon materials have been extracted from the leaves of the rosy periwinkle plant.

Carbon dots, also called carbon quantum dots, are fluorescent materials that are well-suited as both therapeutic and diagnostic agents for cancer because of two unique characteristics – they are biocompatible and can be rapidly excreted from the body and exhibit low toxicity while producing a reliable optical signal. In addition, they can be chemically modified for use as multimodal probes and therapeutic conjugates.

The scientific team is planning next stage animal studies for further evaluation of these nanomaterials in oncological applications, for both diagnostics and treatment. They will concurrently study the factors that would affect the performance and use of carbon nanodots in cancer theranotics, including developing efficient means of delivery, processes for conservation of nanodot bioactivity and the enhancement of specificity towards the target cells.