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UK scientists create intelligent nanoparticles against cancer

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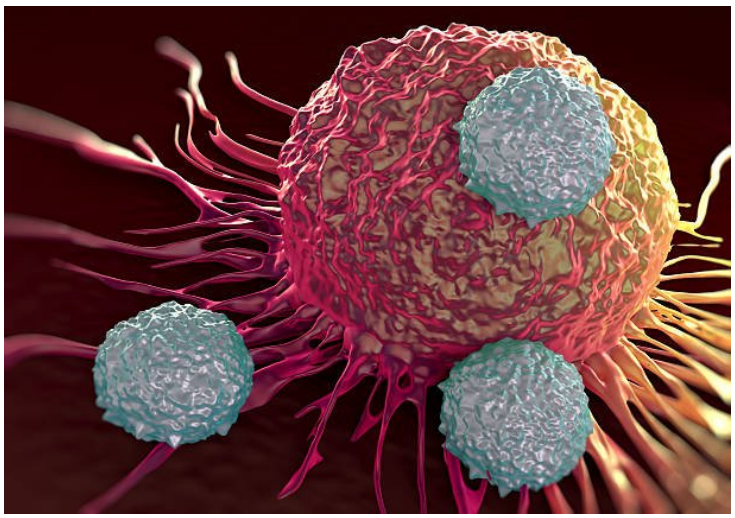

Scientists from the University of Surrey at UK have created intelligent nanoparticles that heat up to a temperature high enough to kill cancerous cells, after which they self-regulate and lose heat before they get hot enough to harm healthy tissues.

The self-stopping nanoparticles could soon be used as part of hyperthermic-thermotherapy to treat patients with cancer. Thermotherapy has long been used as a treatment method for cancer, but it is difficult to treat patients without damaging healthy cells.

But tumor cells can be weakened or killed without affecting normal tissue if temperatures can be controlled accurately within a range of 42°C to 45°C.

Scientists from Surrey's Advanced Technology Institute have collaborated with the Dalian University of Technology in China to create nanoparticles which, when implanted and used in a thermotherapy session, can induce temperatures of up to 45°C.

The Zinc-Cobalt-Chromite ferrite nanoparticles produced for this study are self-regulating in such a way that they self-stop heating when they reach temperatures over 45°C. Importantly, the nanoparticles are also low in toxicity and are unlikely to cause permanent damage to the body.