

Curcumin nanoparticles 'open up' resistant cancers

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Pre-treatment with curcumin, a component of the spice turmeric, makes ovarian cancer cells more vulnerable to chemotherapy and radiotherapy. Researchers writing in BioMed Central's open access *Journal of Ovarian Research* found that delivering the curcumin via very small (less than 100nm) nanoparticles enhanced the sensitizing effect.

Subhash Chauhan, PhD, and Meena Jaggi, PhD, led a team of researchers from Sanford Research and the University of South Dakota, USA, who carried out the in vitro study.

They said, "One strategy to improve the effectiveness and limit the toxicity of cancer therapy is to induce chemo/radio-sensitization in [cancer cells](#) using natural dietary phytochemicals like curcumin. However, curcumin is poorly absorbed by the body, which limits its effectiveness. We have developed a nanoparticle formulation, Nano-CUR, to provide increased bioavailability as well as targeted delivery of curcumin into tumors".

The researchers tested the effects of their curcumin formulation on therapy-resistant [ovarian cancer](#) cells. They were able to show, for the first time, that the pre-treatment lowers the dose of cisplatin and [radiation treatment](#) needed to suppress the growth of the cancer cells. According to Chauhan, "Nanoparticle mediated curcumin delivery will further improve the sensitization and therapeutic capabilities. This study demonstrates a novel pre-treatment strategy that could be implemented in pre-clinical animal models and in future clinical trials".

More information: Curcumin induces chemo/radio-sensitization in ovarian cancer cells and curcumin nanoparticles inhibit ovarian cancer cell growth, Murali M Yallapu, Diane M Maher, Vasudha Sundram, Maria C Bell, Meena Jaggi and Subhash C Chauhan, Journal of Ovarian Research (in press), www.ovarianresearch.com/

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