

# ScienceShot: Gold Nanostars for Attacking Cancer

by Kate McAlpine on 6 January 2012, 1:40 PM | [1 Comments](#)

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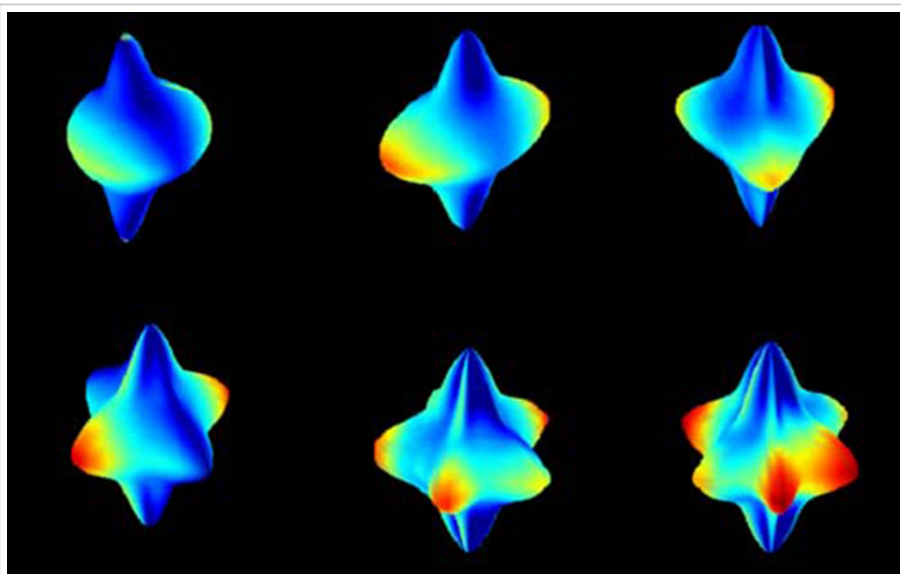
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Credit: R. Rodríguez-Oliveros and J. Sánchez-Gil/Spanish National Research Council

Gold stars, so tiny that it would take a thousand of them to span the diameter of a human hair, could be effective tumor-fighters. Previous studies have shown that minuscule particles of metal or other materials, directed to a tumor and then manipulated by lasers or magnetic fields, can [kill off malignant cells by heating them up](#). Now, researchers suggest that golden particles could burn hotter if fashioned into stars. Gold is already an excellent radiator because electrons on its surface efficiently capture light, but when that surface is spiky, the energized electrons collect at the points, producing higher temperatures, as illustrated above. In a paper published this week in *Optics Express*, the team reported that [an eight-pointed star could generate temperatures more than ten times higher than a spherical particle](#). Moreover, it absorbs lower-energy light, and this would make the treatment easier on healthy cells caught in the beam. A 20-pointed star might be even better, but the scientists haven't done those calculations yet.