

Cockle shells picked to treat dog cancer

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The calcium mineral from which many shellfish, such as cockles, make their shells can be used to form nanoparticles. These nanoparticles can then be "loaded" with small drug molecules, such as anticancer drugs.

Writing in the *International Journal of Nanotechnology* a team from

Malaysia and Nigeria explains how nanoparticles made from the cockleshell material [calcium carbonate](#) aragonite can be used to carry the anticancer drug doxorubicin. These drug-loaded nanoparticles have been used to successfully treat dogs with solid tumours.

Treating solid tumours is problematic in [cancer therapy](#) because the malignant mass is often inaccessible to conventional [anticancer drugs](#). High doses are needed to attack the tumour, but this comes at a price in terms of side-effects, such as damage to the heart with doxorubicin, for instance. Finding ways to target the tumour with the drug more directly would mean a lower dose could be used and still have the same effect but without the cardiotoxicity.

Cockle shell-derived [calcium](#) carbonate has been shown to have potential as a drug-delivery agent by using it to fabricate nanoparticles to carry the drug. The present team has now carried out a prospective single centre, non-blind open clinical trial of repeated doses of the nanocomposite on dogs with [solid tumours](#) in their bones over the course of fifteen weeks.

The team reports no major adverse effects and success was seen in treating bone cancer in the dogs with great improvement in the quality of life of the animals.

More information: Abubakar Danmaigoro et al. Targeted delivery of doxorubicin-loaded cockle shell-derived CaCO_3 aragonite nanoparticles on dogs with solid tumours, *International Journal of Nanotechnology* (2020). [DOI: 10.1504/IJNT.2019.107365](https://doi.org/10.1504/IJNT.2019.107365)

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