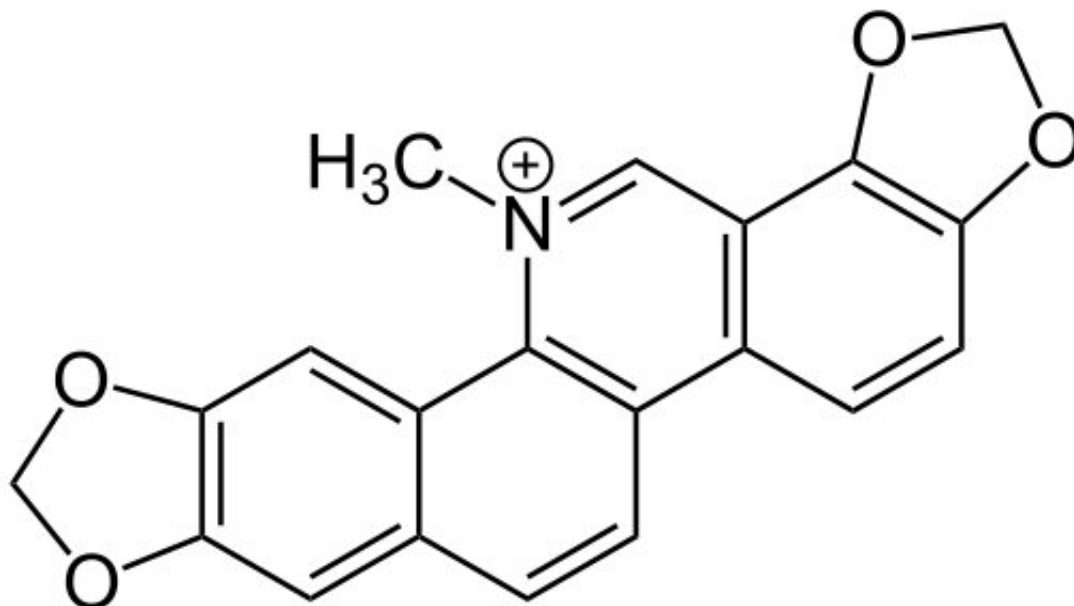


# Natural nanotech anticancer drug

November 2 2018, by David Bradley

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Sanguinarine is a natural product, a chemical made by certain plants including the bloodroot plant (*Sanguinaria canadensis*), the Mexican prickly poppy (*Argemone mexicana*), *Chelidonium majus*, and *Macleaya cordata*. It is a slightly toxic polycyclic ammonium ion, an alkaloid, and has been demonstrated to have antitumour and antiviral properties. It also blocks the formation of blood vessels, it is antiangiogenic, and so has even greater potential as an anticancer agent.

Now, a team from Russia has investigated the potential of this

compound to be delivered to diseased target sites in the body using nanoscopic carriers known as liposomes. The team suggests that the liposomes can more efficiently deliver the putative [drug](#) compound to cancer [cells](#) than it simply being delivered by conventional chemotherapy methods (as a drug solution given either by mouth or intravenously).

Their tests revealed that the liposome preparations gave a prolonged release of the drug rather than it being processed quickly by the liver and excreted by the kidneys as happens with conventional drugs. Indeed, the drug-bearing [liposomes](#) showed a dose-dependent response in terms of cytotoxicity in the laboratory against B16 cells (experimental mouse melanoma cells).

"Liposomal sanguinarine may have advantages for in vivo anticancer therapy, due to its lower toxicity and 'passive targeting' as a result of enhanced permeability of tumour vessels," the team reports in the *International Journal of Nanotechnology*.

**More information:** Preparation of liposomes containing benzophenanthridine alkaloid sanguinarine and evaluation of its cytotoxic activity. *International Journal of Nanotechnology*.  
[DOI: 10.1504/IJNT.2018.094785](https://doi.org/10.1504/IJNT.2018.094785)

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