MedicalXpress

Vitamin E extract could help tackle cancer tumours

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(PhysOrg.com) -- An extract of vitamin E could have a key role to play in the treatment of cancerous tumours, according to newly-published research today.

The research team from Glasgow and the University of Strathclyde, investigated the vitamin E extract Tocotrienol, which has been found in the past to have anti-cancer properties, but failed to reach tumours after intravenous administration without secondary effects to healthy tissues.

The researchers developed a formulation of tocotrienol which could be specifically delivered to tumours after intravenous administration through the use of transferrin, a plasma protein which transports iron through the blood and whose receptors are present in large amounts in many cancers.

This formulation led to tumours shrinking within one day of treatment and nearly disappearing within 10 days, the maximum duration authorized for the experiments. Although the tumours grew after the treatment ended, the rate of growth was lower than had been seen in trials with other formulations.

The researchers hope that there may be scope to improve further the therapeutic efficacy of the system they have developed by using higher doses and extending the length of the treatment.

Dr Christine Dufčs, a Lecturer at the Strathclyde Institute of Pharmacy

and Biomedical Sciences, led the research. She was joined by Glasgow's Dr Laurence Tetley, of the faculty of biomedical and life sciences. Ju Yen Fu and David Blatchford, both of the Strathclyde Institute of Pharmacy and Biomedical Sciences were also involved in the work.

Dr Dufčs: "This new formulation proved to be very efficient and has had extremely encouraging results.

"In the anti-cancer studies done to date, no therapeutic effect has been found after intravenous administration of tocotrienol. We demonstrated that the intravenous administration of tocotrienol entrapped in a tumour-targeted delivery system leads to a fast tumour regression without visible secondary effects on healthy tissues.

"This therapeutic system is very promising. We have tested it in laboratory settings on skin cancer and are currently investigating other therapeutic systems which give promising results as well".

More information: The research has been published in the *Journal of Controlled Release*. The full research paper can be seen viewed by clicking here.

Provided by University of Glasgow