

Virus a potential future cancer medicine

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In a new project, researchers from LIFE – the Faculty of Life Sciences at the University of Copenhagen – document that the vesicular stomatitis virus (VSV) plays a previously unknown dual role in the prevention of a number of cancers. The new findings show that the virus both kills cancer cells and stops the expression of the molecules which certain types of cancer cells produce to hide from the immune system.

Certain types of cancer cells express far too many liquid immunostimulatory molecules, blocking the immune system's ability to recognise them, and enabling them to continue the development of cancer.

"The overexpression seen in cancer types such as melanoma, testicular cancer, ovarian cancer and certain types of leukaemia significantly impairs the immune system, thereby reducing the patient's chance of recovery," says Associate Professor in immunology Søren Skov from LIFE.

Søren Skov is heading a research team which has just launched a major EU project to study the potential for improving cancer treatment by strengthening the immune system.

As part of the research project, PhD student Helle Jensen has infected human cancer cells with VSV.

"We were able to demonstrate that the [virus](#) kills cancer cells. The results also show that VSV effectively blocks the production of the

immunostimulatory molecules which certain types of cancer overexpress to destroy the immune system and thus the chances of survival," Associate Professor Skov says.

This is a clear breakthrough and a giant leap towards better cancer treatment. The immune system will be able to more effectively stop the development of cancer when not sidelined. In addition, it is possible to mutate the virus and thus adapt it to the relevant type of [cancer](#). There is thus a potential for a future alternative to chemotherapy, tailored to the individual patient, says Associate Professor Søren Skov.

"The next step will be clinical trials in humans. Such trials are already being conducted in the USA," says Helle Jensen, who has carried out the research project at LIFE in collaboration with the Faculty of Health Sciences at the University of Copenhagen and the National Veterinary Institute at the Technical University of Denmark (DTU).

Provided by University of Copenhagen

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