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Tomato genes produce promising results against brain tumours

Tomato genes could be used as a future treatment in gene therapy, according to new research results from Lund University.

Jure Piskur is a Professor at the Department of Biology, Lund University. Together with colleagues from Stockholm, Copenhagen and Lund, he has recently published research results on a tomato gene that it seems could be of value in future treatment of brain tumours. The results are reported in the journal Neuro-Oncology.

Research on gene therapy has been underway for a long time and last autumn the first gene therapy treatment was launched onto the market, by Ark Therapeutics from Kuopio in Finland.

The idea of gene therapy is to introduce an alien gene into a patient's cancer cells. In combination with a specific drug, the introduced gene can cause the cancer cells to die. The tumour does not disappear, but the hope is that the disease can be halted for a couple of years.

"Our research results on the tomato gene show a superior alternative to the main ingredient that they have started using in Finland and we have now begun cooperating with the researchers in Kuopio", says Jure Piskur.

It certainly sounds incredible that it could be possible to use a tomato plant in cancer treatment. Jure Piskur explains that it is a matter of 'suicide genes', which can cause cells to die.

In the tomato the gene's actual task is to produce small building blocks for the plant's genetic make-up, but in combination with the drug AZT the tomato gene appears to kill the cancer cells. AZT is a drug that was first developed in the fight against HIV.

Professor Piskur came into contact with cancer research by chance. He is a researcher in molecular evolution and his interests include how enzymes have developed over millions of years. Enzymes are proteins that set off or speed up different chemical reactions in the body.

Jure Piskur has studied enzymes in a wide range of different organisms, from bacteria to animals. The tomato gene in question codes for an enzyme called thymidine kinase.

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