



МІНІСТЕРСТВО ОСВІТИ І НАУКИ УКРАЇНИ  
СУМСЬКИЙ ДЕРЖАВНИЙ УНІВЕРСИТЕТ  
КАФЕДРА ІНОЗЕМНИХ МОВ  
ЛІНГВІСТИЧНИЙ НАВЧАЛЬНО-МЕТОДИЧНИЙ ЦЕНТР

## **МАТЕРІАЛИ**

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ЛІНГВІСТИЧНОГО НАВЧАЛЬНО-МЕТОДИЧНОГО ЦЕНТРУ  
КАФЕДРИ ІНОЗЕМНИХ МОВ**

**«TO MAKE THE WORLD SMARTER AND SAFER»**

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## A NEW CLASS OF CANCER-KILLING VIRUSES

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T-VEC (Talimogene laherparepvec) is a local immunotherapy that contains a modified herpes virus with which a skin cancer can be cured. The invention of T-VEC can be called a breakthrough in medicine because it saves the lives of people who have inoperable stages III and IV of melanoma.

Nowadays, a traditional chemotherapy is a thing of the past therefore, a new technique for using the virus is gaining popularity. An innovative drug was tested on 436 melanoma patients with different stages of cancer (IIIB, IIIC, IIID). At the end of the study, the research team concluded that 39% of the participants had a therapeutic response to T-VEC, which means that tumors in which administered the drug, completely disappeared. Another 18% of participants showed a significant decrease in the tumor, but not its complete disappearance. Thus, it is difficult to ignore 39% of the therapeutic response, so, scientists began to improve the drug so that soon every hopeless patient could get a chance for recovery.

The action of the drug is based on the characteristic property of viruses to incorporate and then replicate their DNA in a human cell. T-VEC is injected directly into the tumor, where the modified herpes viruses infect cancer cells. They leave healthy cells because the modified herpes virus can only propagate inside cancer cells. Injection causes rupture of melanoma cells, thereby activating the immune system, which has already destroyed cancer cells independently without the help of the virus. The treatment is used every few weeks until the cancer disappears, which takes about four months. Importantly, this method is practically safe for humans, as evidenced by the fact that T-VEC is the only modified virus that the FDA has approved for treatment.

T-VEC is an oncolytic herpes virus. Two genes were removed – one that shuts down an individual cell's defenses, and

another that helps the virus evade the immune system. The drug works by replicating in cancer cells, causing them to burst. Accordingly, with T-VEC, doctors have new options when choosing the treatment. This means that they do not need to remove the tumors surgically, and this will avoid many problems and postoperative complications. Oncolytic viruses are in clinical trials treating a broad array of malignancies including melanoma, sarcoma, carcinomas of the breast, lung, colon, prostate, kidney, liver pancreas, bladder and ovary.

List of references:

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2. <https://www.umj.com.ua/article/136801/preparat-na-osnove-virusa-gerpesa-effektiven-pri-melanome>

## SWALLOWABLE GASTRIC BALLOON COULD HELP WITH WEIGHT LOSS

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Nowadays, obesity cannot be ignored no more, it is a major factor which is harmful for our human health. This metabolic illness results from excess accumulation of body fat. Obesity increases the development of such fatal diseases including diabetes mellitus, coronary heart disease, stroke, hypertension. Curing obese patients prevents the development of complications and irrevocable changes. Current therapeutic methods are maintaining a healthy lifestyle, a medical treatment, bypass surgery.

Besides, the most effective treatment for obesity and type 2 diabetes is a weight-loss surgery. However, only 1% of obese patients eligible for bypass surgery choose to undergo it. Therefore, the invention of less invasive and efficient method of