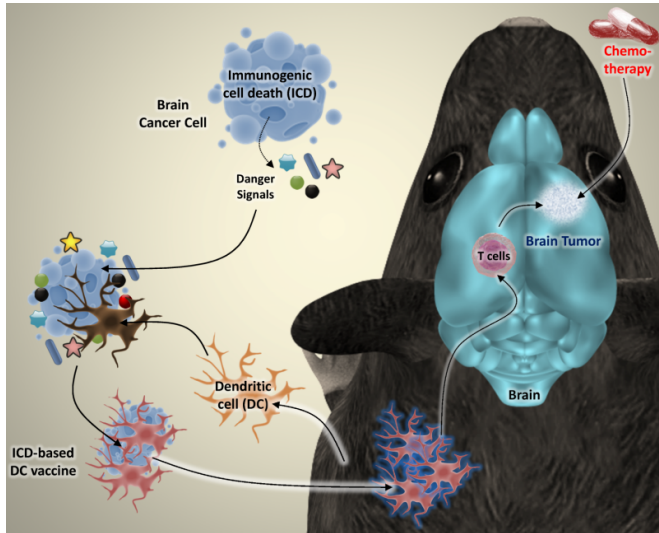


# Next-generation immunotherapy offers new hope for beating brain cancer

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Cell-based immunotherapy involves the injection of a therapeutic anticancer vaccine that stimulates the patient's immune system to attack the tumour. Thus far, the results of this type of immunotherapy have been mildly promising. However, Abhishek D. Garg and Professor Patrizia Agostinis from the KU Leuven Department of Cellular and Molecular Medicine have now found a novel way to produce more effective cell-based anticancer vaccines.

The researchers induced a specific type of cell death in [brain cancer](#) cells from mice. The dying cancer cells were then incubated together with dendritic cells, which play a vital role in the immune system. The researchers discovered that this type of cancer cell killing releases 'danger signals' that fully activate the dendritic cells.

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Combined with chemotherapy, this novel cell-based immunotherapy drastically increased the survival rates of mice afflicted with brain tumours. Almost 50% of the mice were completely cured. For the sake of comparison: none of the mice treated with [chemotherapy](#) alone became long-term survivors.

High-grade glioma is the most aggressive form of brain cancer. Despite improvements in surgical procedures, chemotherapy, and radiotherapy, this type of brain tumour is still notoriously hard to treat: less than 10% of patients survive beyond five years. Researchers from KU Leuven, Belgium, have now shown that next-generation cell-based immunotherapy may offer new hope in the fight against brain cancer.

"The major goal of any anticancer treatment is to kill all cancer cells and prevent any remaining malignant cells from growing or spreading again", Professor Agostinis continues. "This goal, however, is rarely achieved with current chemotherapies, and many patients relapse. That's why the co-stimulation of the immune system is so important for cancer treatments. Scientists have to look for ways to kill cancer cells in a manner that stimulates the [immune system](#). With an eye on clinical studies, our findings offer a feasible way to improve the

production of vaccines against brain tumours."

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