

# Combination therapy for glioblastoma shows promising results in early-stage research

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UCLA researchers have discovered that combining a vaccine developed at UCLA with other experimental therapies and FDA-approved treatments shows promise for reducing the size of advanced brain tumors. The immunotherapy, which is specifically intended to treat brain tumors, is called autologous tumor lysate-pulsed dendritic cell vaccination. It uses a portion of the patient's own brain tumor and is currently being tested in humans.

Provided by University of California, Los Angeles

In tests in animals, the scientists found that a combination of the vaccine and two different drugs that modulate distinct aspects of the immune system was more effective at allowing T cells to attack glioblastoma than the vaccine alone. The two added drugs were a PD-1 antibody blockade, which enhanced T cell activation inside the tumor, and an [investigational drug](#) called PLX3397, which reduces [immune suppression](#) within the tumor.

Glioblastoma is the most common type of [malignant brain tumor](#) in adults, and one of the deadliest. More than 12,000 people will be diagnosed with the disease this year, and the five-year survival rate for patients is less than 5 percent. It has a high probability of recurring after treatment and there is no standard therapy for [recurrent glioblastoma](#). The team studied the approach in mice and on tumor samples from human patients.

The findings may point scientists to a process for developing more effective combination treatments for people with glioblastoma and other immunosuppressive cancers.

**More information:** Joseph P. Antonios et al. Immunosuppressive tumor-infiltrating myeloid cells mediate adaptive immune resistance via a PD-1/PD-L1 mechanism in glioblastoma, *Neuro-*

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