



An official website of the United States government  
[Here's how you know](#)

FULL TEXT LINKS



> [Mol Cancer Ther](#). 2023 Feb 10;MCT-22-0503. doi: 10.1158/1535-7163.MCT-22-0503.  
Online ahead of print.

# Current Status and Challenges of Vaccination Therapy for Glioblastoma

[Hamed Hosseinalizadeh](#)<sup>1</sup>, [Mohammad Rahmati](#)<sup>2</sup>, [Ammar Ebrahimi](#)<sup>3</sup>, [Roddy S O'Connor](#)<sup>4</sup>

Affiliations

PMID: 36779991 DOI: [10.1158/1535-7163.MCT-22-0503](#)

## Abstract

Glioblastoma (GBM), also known as grade IV astrocytoma, is the most common and deadly type of central nervous system malignancy in adults. Despite significant breakthroughs in current GBM treatments such as surgery, radiotherapy, and chemotherapy, the prognosis for late-stage glioblastoma remains bleak due to tumor recurrence following surgical resection. The poor prognosis of GBM patients highlights the evident and pressing need for more efficient and targeted treatment. Vaccination has shown some success in treating patients with advanced colorectal and lung cancer. Therefore, the potential value of using tumor vaccines in treating glioblastoma is increasingly discussed as a monotherapy or in combination with other cellular immunotherapies. Cancer vaccination includes both passive administration of monoclonal antibodies and active vaccination procedures to activate, boost, or bias antitumor immunity against cancer cells. This article focuses on active immunotherapy with peptide, genetic (DNA, mRNA), and cell-based vaccines in treating GBM and reviews the various treatment approaches currently being tested. Although the ease of synthesis, relative safety, and ability to elicit tumor-specific immune responses have made these vaccines an invaluable tool for cancer treatment, more extensive cohort studies and better guidelines are needed to improve the efficacy of these vaccines in anti-GBM therapy.

## LinkOut - more resources

Full Text Sources

[Silverchair Information Systems](#)