



> [Anticancer Agents Med Chem](#). 2023 Feb 2. doi: 10.2174/1871520623666230202163112.

Online ahead of print.

Glioblastoma as a novel drug repositioning target: Updated state

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PMID: 36733195 DOI: [10.2174/1871520623666230202163112](#)

Abstract

Glioblastoma multiforme (GBM) is an aggressive form of adult brain tumor that can arise from a low-grade astrocytoma. In recent decades, several new conventional therapies have been developed that have significantly improved the prognosis of patients with GBM. Nevertheless, most patients have a limited long-term response to these treatments and survive < 1 year. Therefore, innovative anti-cancer drugs that can be rapidly approved for patient use are urgently needed. One way to achieve accelerated approval is drug repositioning, extending the use of existing drugs for new therapeutic purposes, as it takes less time to validate their biological activity as well as their safety in preclinical models. In this review, a comprehensive analysis of the literature search was performed to list drugs with antiviral, antiparasitic, and antidepressant properties that may be effective in GBM and their putative anti-tumor mechanisms in GBM cells.

Keywords: Blood-brain barrier; Brain tumor; Drug repositioning; GBM; Glioblastoma; Non-cancer drugs.

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