Special Issue

Glioma: From Intracellular Oncogenic Pathways to Targeting Therapeutic Strategies

Message from the Guest Editor

Gliomas are the most common and aggressive type of primary brain tumors originating from glial cells. Key oncogenic pathways such as PI3K/AKT/mTOR, MAPK/ERK, and Notch are critically involved in glioma growth, survival, invasion, and treatment resistance. Genetic and epigenetic modifications, including mutations in IDH1/2, EGFR amplification, and methylation of the MGMT promoter, play crucial roles in tumor behavior and patient prognosis. The challenges of developing effective treatments due to glioma's highly heterogeneous nature and the presence of the blood–brain barrier. Traditional therapies like surgery, radiation, and chemotherapy (e.g., temozolomide) often face limitations due to resistance mechanisms and recurrence. Recent advances include molecularly targeted therapies, such as inhibitors of key pathways (e.g., EGFR inhibitors, PI3K/mTOR inhibitors), immunotherapy approaches (e.g., CAR T-cell therapy, immune checkpoint inhibitors), and novel drug delivery systems like nanocarriers to cross the BBB. Moreover, personalized medicine approaches and combination therapies are emphasized for their potential to enhance treatment efficacy and patient outcomes.

Guest Editor

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Message from the Editor-in-Chief

Cancers is an international online journal addressing both clinical and basic science issues related to cancer research. The journal is publishing in Open Access format, which will certainly evolve to ensure that the journal takes full advantage of the rapidly changing world of information and knowledge dissemination. It publishes high-quality clinical, translational, and basic science research on cancer prevention, initiation, progression, and treatment, as well as other related topics, particularly to capture the most seminal studies in the rapidly growing area of immunology, immunotherapy, and tumor microenvironment.

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