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In vivo C6 glioma models: an update and a guide toward a more effective preclinical evaluation of potential anti-glioblastoma drugs

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Abstract

Glioblastoma multiform (GBM) is the most common primary brain tumor with a poor prognosis and few therapeutic choices. *In vivo*, tumor models are useful for enhancing knowledge of underlying GBM pathology and developing more effective therapies/agents at the preclinical level, as they recapitulate human brain tumors. The C6 glioma cell line has been one of the most widely used cell lines in neuro-oncology research as they produce tumors that share the most similarities with human GBM regarding genetic, invasion, and expansion profiles and characteristics. This review provides an overview of the distinctive features and the different animal models produced by the C6 cell line. We also highlight specific applications of various C6 *in vivo* models according to the purpose of the study and offer some technical notes for more convenient/repeatable modeling. This work also includes novel findings discovered in our laboratory, which would further enhance the feasibility of the model in preclinical GBM investigations.

Keywords: C6 cell line; glioblastoma multiform; intracranial tumor; in vivo models; subcutaneous tumor.

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