ABSTRACT

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Targeting glioblastoma stem cells: The first step of photodynamic therapy.

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Glioblastoma is one of the most malignant types of brain cancer. Evidence suggests that within gliomas there is a small subpopulation of cells with the capacity for self-renewal, called glioma stem cells. These cells could be responsible for tumorigenesis, chemo and radioresistance, and finally for the recurrence of the tumor. Fluorescence-guided resection have improved the results of treatment against this disease, prolonging the survival of patients by a few months. Also, clinical trials have reported potential improvements in the therapeutic response after photodynamic therapy. Thus far, there are few published works that show the response of glioblastoma stem-like cells to photodynamic therapy. Here, we present a brief review exclusively commenting on the therapeutic approaches to eliminate glioblastoma stem cells and on the research publications about this topic of glioblastoma stem cells in relation to photodynamic therapy. It is our hope that this review will be useful to provide an overview about what is known to date on the topic and to promote the generation of new ideas for the eradication of glioblastoma stem cells by photodynamic treatment.

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