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1: [Surg Neurol](#). 2009 Mar;71(3):274-9.



### **Brain tumor stem cells: view from cell proliferation.**

[Yao Y](#), [Tang X](#), [Li S](#), [Mao Y](#), [Zhou L](#).

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A small population of TSCs, which form neurospheres and possess the capacity for self-renewal, has been recently identified in adult and pediatric brain tumors. They differentiate into phenotypically diverse populations, including neuronal, astrocytic, and oligodendroglial cells in vitro and recapitulate original tumors in vivo. The understanding of brain TSCs has been greatly advanced by the knowledge of cell proliferation, which contributes to initiate and sustain the malignant phenotype. In this article, the authors summarized the evidence of the presence of TSCs in human brain tumors and emphasized the significance of the proliferative status of TSCs. By analyzing the data, the authors found that CD133(+) cell-initiated glioblastomas have a higher proliferation index when compared to CD133(-) cells-induced glioblastomas. Furthermore, the relationship and difference of cell proliferation between TSCs and normal NSCs were reviewed. Finally, the preliminary evidence that TSCs in malignant brain tumors have more proliferative capacity than stem/progenitor cells in benign brain tumors was discussed.

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