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1: [Stem Cell Rev.](#) 2008 Sep;4(3):203-10.

**Glioma formation, cancer stem cells, and akt signaling.**

[Hambardzumyan D](#), [Squatrino M](#), [Carbajal E](#), [Holland EC](#).

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Several recent reports have provided evidence that cancer is initiated by a rare fraction of cells called "cancer stem cells" which are multipotent, self-renewing subset of the tumor. However, several issues regarding the biology and techniques of isolating these cells from solid tumors remain to be clarified. In addition, experimental data supports two possibilities for glioma cell of origin. First, that stem cells or early progenitors are transformed and show variable differentiation of their progeny during tumor development. Second, that more differentiated glia are transformed by genetic events that lead to a loss of differentiation maintenance. In human gliomas, these two theories are not mutually exclusive. In this review we will summarize both theories, and highlight outstanding issues that remain to be resolved.

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