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Brain tumor stem cells: bringing order to the chaos of brain cancer.

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Brain tumors are generally incurable cancers. Work from a number of laboratories strongly suggests that they are organized as a hierarchy based on a subset of cancer cells that have stem-cell properties. These cells have now been shown to be resistant to conventional therapy and responsive to differentiation therapy. New in vitro and in vivo models for interrogating brain tumor cells in stem-cell conditions have been developed that provide important new opportunities for elucidating the key pathways responsible for driving the proliferation of these cells. Continued application of the principles of stem-cell biology to the study of brain cancers is likely to continue to bring further important insight into these aggressive cancers, bringing new treatments and understanding of the origins.

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