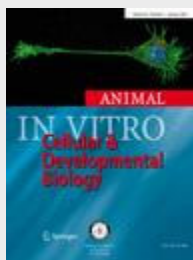


Journal Article



Identification of cancer stem-like cells in the C6 glioma cell line and the limitation of current identification methods

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Abstract The cancer stem cell (CSC) hypothesis has provided insights into the initiation and recurrence of brain tumor. Specific identification and targeted elimination of these CSCs within the tumor mass represents a promising therapeutic strategy for refractory brain tumors. In this study, we attempted to identify CSCs in the rat C6 glioma cell line by three different identification methods. It is interesting to note that single-cell clonal analysis showed most C6 cells are cancer stem-like cells with characteristics of self-renewal, multilineage differentiation potentials *in vitro*, and tumorigenic capacity *in vivo*. It is surprising to note that CD133 failed to identify the total cancer stem-like cell population in the C6 line, since both CD133 (+) and CD133 (–) C6 cells have cancer stem-like cell fractions. Moreover, Hoechst 33342 staining, which is used in flow cytometry to isolate the side population (SP), was found to be harmful to C6 cells. Therefore, CD133 (–) and non-SP C6 cells may also harbor cancer stem-like cells. These results imply the limitation of using current identification methods in C6 line and underscore the importance of defining the genetic and molecular basis of CSCs.

Keywords Cancer stem cell - C6 glioma cell line - CD133 - Side population

Gang Shen and Fang Shen contributed equally to this work and thus are regarded as the cofirst author.

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References secured to subscribers.

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