Examination of the Molecular Mechanisms Associated with Quiescence

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The cell cycle refers to the series of events that occur in a cell as it develops and divides. Quiescence is the reversible state in which the cell does not divide, but retains the ability to return to proliferation. The proliferation-quiescence decision is not well-understood. The aim of the research is to identify the sequence of molecular events that occur during physiological cell cycle exit. To do so, time-lapse microscopy is being used in conjunction with live-cell fluorescent reporters and immunofluorescent imaging. Cells were classified as proliferating, deciding, and arresting. Deciding cells have longer cell cycle phases than proliferating cells. The times at which various molecular markers rise and fall in the transition to quiescence will be examined using antibody validation and iterative indirect immunofluorescent imaging (4i).