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A simple and effective method for ultrastructural analysis of mitosis in *Drosophila* S2 cells

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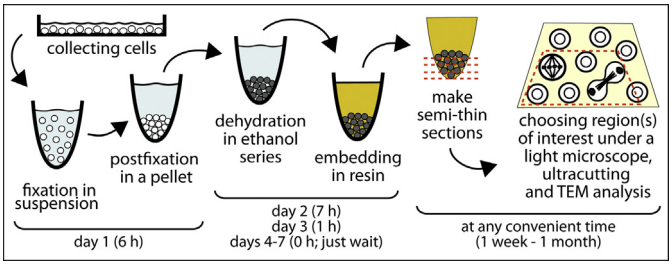
GRAPHICAL ABSTRACT



ABSTRACT

The *Drosophila* S2 tissue culture cells are a widely used system for studies on mitosis. S2 cells are particularly sensitive to gene silencing by RNA interference (RNAi), allowing targeted inactivation of mitotic genes. S2 cells are also well suited for high-resolution light microscopy analysis of mitosis in fixed cells, and can be easily immunostained to detect mitotic components. In addition, S2 cells are amenable to transformation with plasmid encoding fluorescently tagged mitotic proteins, allowing *in vivo* analysis of their behavior throughout cell division. However, S2 cells have not been widely used for transmission electron microscopy (TEM) analysis, which provides ultrastructural details on the morphology of the mitotic apparatus that cannot be obtained with high-resolution confocal microscopy. Here, we describe a simple method for the ultrastructural analysis of mitosis in *Drosophila* S2 cells.

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