Video Article

Upright Imaging of Drosophila Embryos

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URL: http://www.jove.com/video/2233
DOI: doi:10.3791/2233

Keywords: Drosophila, Confocal imaging, Multiplex in situ hybridization, patterning

Date Published: 6/15/2015

Citation: Belu, M., Javier, M., Ayasoufi, K., Frischmann, S., Jin, C., Wang, K.C., Sousa-Neves, R., Mizutani, C.M. Upright Imaging of Drosophila Embryos. *J. Vis. Exp.* (), e2233, doi:10.3791/2233 (2015).

Abstract

Several well-known morphogenetic gradients and cellular movements occur along the dorsal/ventral axis of the Drosophila embryo. However, the current techniques used to view such processes are somewhat limited. The following protocol describes a new technique for mounting fixed and labeled Drosophila embryos for coronal viewing with confocal imaging. This method consist of embedding embryos between two layers of glycerin jelly mounting media, and imaging jelly strips positioned upright. The first step for sandwiching the embryos is to make a thin bedding of glycerin jelly on a slide. Next, embryos are carefully aligned on this surface and covered with a second layer of jelly. After the second layer is solidified, strips of jelly are cut and flipped upright for imaging. Alternatives are described for visualizing the embryos depending upon the type of microscope stand to be used. Since all cells along the dorsal-ventral axis are imaged within a single confocal Z-plane, our method allows precise measurement and comparison of fluorescent signals without photobleaching or light scattering common to 3D reconstructions of longitudinally mounted embryos.

Disclosures

No conflicts of interest declared.

