Web watch

WATCH AND LEARN

• http://www.myjove.com/index.stt

Protocols in life-science research are often complicated and fine details can make or break an experiment. Written protocols often don't spell out important details, and the nature of the equipment and biological samples becomes more obvious with a visual demonstration. So, if you are struggling to get your experiments to work and you want someone to show you how to do the experiment, rather than tussling with yet another written protocol, check out the recently launched *Journal of Visualized Experiments* (*JoVE*).

JoVE is an online journal that publishes visualized (video-based) biological research studies. The web site aims to solve some of the most difficult problems in contemporary life-science research, such as the time-consuming learning of experimental techniques, and how to reliably reproduce biological experiments.

Each video-article will include step-by-step instructions for an experiment, a demonstration of equipment and reagents, and a short discussion by experts describing possible technical problems and modifications.

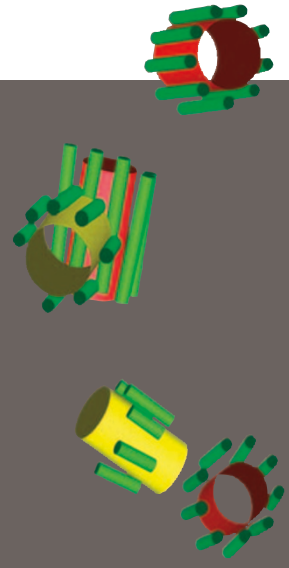
Access to the journal is free, so scientists can search for videos relevant to their work and use them as protocols. Publication in *JoVE* is also free — which is remarkable, considering that *JoVE* has no outside funding and runs on a volunteer staff of two.

JoVE is the pet project of Moshe Pritsker, a postdoctoral researcher at Massachusetts General Hospital in Boston, USA, who hopes that the effectiveness of visual instructions compared with currently used written protocols will decrease failure rates for biological experiments and, therefore, save scientists time and money. It will also increase reproducibility of published results, one of the main problems in life-science research.

Ekat Kritikou

CELL DIVISION

The art of barrel coopery



Centrioles are involved in many cellular processes and duplicate once per cell cycle. Using electron tomography and other microscopy techniques, Pelletier *et al.* have analysed the duplication process of these barrel-shaped structures in single-cell *Caenorhabditis elegans* embryos.

Oocytes of *C. elegans* lack centrioles, but fertilization by sperm contributes a centriole pair to the single-cell embryo. After completing meiosis, the embryo enters the first mitotic division, which is characterized by distinct stages — pronuclear appearance (PNA), pronuclear migration (PNM), pronuclear rotation (PNR) and metaphase — during which a daughter centriole is assembled orthogonally to each mother centriole.

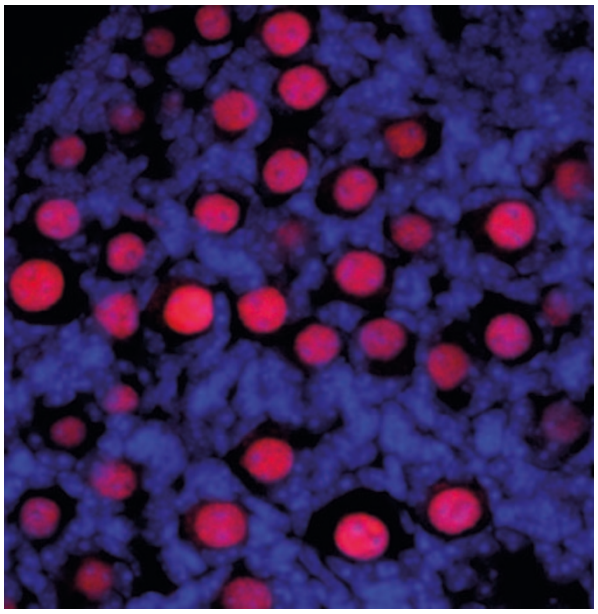
To visualize the recruitment of known centriole proteins during the centriole-assembly process, the authors used oocytes that expressed GFP-tagged centriole proteins. The centriole proteins SPD-2 and ZYG-1 were recruited soon after fertilization, whereas SAS-4, SAS-5 and SAS-6 were recruited later, during PNA. By depleting individual proteins and assessing the effect on the recruitment of the other proteins, the authors deduced that SPD-2 functions upstream of ZYG-1 and that these two proteins are required for the recruitment of SAS-5 and SAS-6, which, in turn, promotes the recruitment of SAS-4.

Centrioles in *C. elegans* consist of a central tube surrounded by nine single microtubules. By carrying out electron tomography studies at different stages during the first cell division, Pelletier and colleagues observed the first daughter centriole intermediate — the central tube — at the PNA stage. The central tube continued to elongate and increase

A three-dimensional representation of daughter centriole assembly that is orthogonal to the older mother centriole. Image courtesy of L. Pelletier, Max Planck Institute of Molecular Cell Biology and Genetics, Dresden, Germany.

DNA REPAIR

Dedicated protection for the female germline



Immunolocalization of TAp63 to immature oocytes (red) in a background of follicular cells (blue) in the ovary. Image courtesy of E.-K. Suh, Harvard Medical School, USA.

In mammals, meiosis in the female germline has a well documented but peculiar feature — oocytes enter meiosis during fetal development, but arrest in meiosis I until ovulation. In humans, this arrest can last decades! New work by Frank McKeon and colleagues shows that an isoform of p63 is highly expressed in these arrested oocytes, and that it functions exclusively in the female germline to eliminate oocytes with DNA damage.

Since the discovery of *p63* and *p73*, two genes that are related to the p53 tumour suppressor gene, researchers have been interested in how the functions of these three related genes might fit together. To investigate this problem, the authors made antibodies to a specific, so far unstudied, isoform of p63 — TAp63. They found that TAp63 protein was expressed specifically in

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