

GUIDE ON USE OF INSTRUMENTS FOR PICKING UP OOCYTES AND EMBRYOS

Many different devices are used in IVP laboratories for this task. Shown in Figure 1 are three instruments that receive widespread use - a Microdispenser and wiretrol, produced by Drummond, and the Unopette, which is from BectonDickinson. We obtain all of these from Fisher. In addition, homemade devices can be made using various materials including pulled glass Pasteur pipettes.



Figure 1. Some instruments used to pick up embryos and oocytes. From left to right are 1) a 1 cc syringe with an extension of rubber tubing connected to an Unopette, 2) a wiretrol (from Drummond Scientific), 3) the same device as #1 without the rubber tubing extension and 4) a 5 ml Drummond Microdispenser.

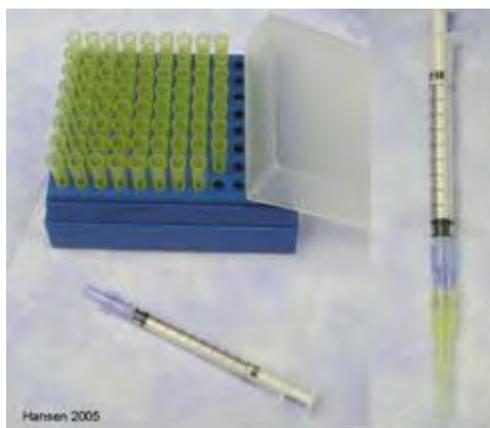


Figure 2. Another option for picking up large quantities of embryos and oocytes is the modified 1cc syringe. The syringe utilizes sterile 200 µl pipet tips by an adapter available from AgTech.

Tips for use of instruments for manipulating oocytes and embryos

- 1) Keep the tips sterile. Before starting, wipe the barrel of the wiretrol or microdispenser with 70% ethanol. Make sure the ethanol evaporates before proceeding. The capillary tubes for the wiretrol and Drummond Microdispenser are sterile as supplied by the manufacturer. Avoid contaminating the tip when placing it on the microdispenser. Do not touch the working end of the tip with fingers or anything else not sterile. If in doubt, replace the tip - they are cheap.
- 2) Mineral oil can be a problem by obscuring ability to visualize embryos. Avoid dragging it around unnecessarily. If oil is carried on the tip during movement of embryos into microdrops, clean the oil off by shaking gently in an empty well of medium. One can avoid sucking oil into the microdispenser by ensuring that the plunger is depressed when withdrawing from a microdrop after a group of oocytes or embryos has been placed in it.
- 3) If possible, try to learn how to pipette with one hand so the other hand can be used to control the plate. However, not everyone will find it necessary to keep one hand free so use two hands if you are more comfortable.

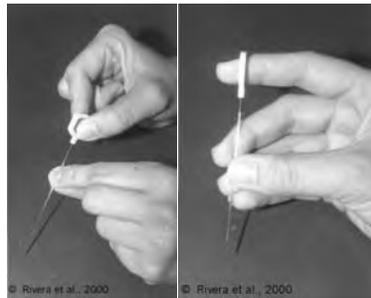


Figure 3. Use of the wiretrol using two hands (left panel) or one hand (right panel).

- 4) The Unopette is designed to fit over a 1 cc syringe. However, one can make a more easy-to-manipulate version of the Unopette by attaching a small piece of rubber tubing between the syringe and Unopette. This tubing can act as a bulb to create suction in the Unopette. With the modified Unopette, keep the plunger at the 0.1 cc mark so that sufficient air is in the apparatus. See Figure 4.

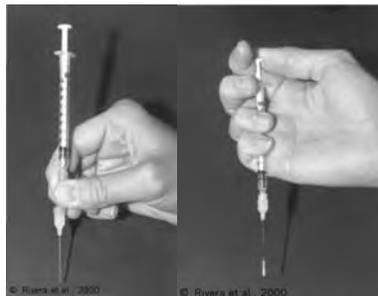


Figure 4. Two methods for using the Unopette tip. The device on the left panel has been modified to include a piece of rubber tubing between the Unopette and syringe to give the technician greater control over the volume aspirated.

- 5) With the Unopette, make sure that the embryos are not sucked past the capillary tube portion of the device or they will probably be lost. With the wiretrol, be careful to not withdraw the plunger so

far it comes out while picking up oocytes or embryos (when concentrating on picking up embryos, it is easy to forget how much volume has been collected).

6) When possible, do not attempt to pick up embryos while under the influence of alcohol. Personal experience indicates that all sorts of bad things can happen.

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