Mouse Pronuclear Microinjection Training Syllabus

Purpose:
To provide all knowledge and hands-on experience necessary to perform pronuclear injection of fertilized mouse eggs and to produce transgenic mice. Trainees may provide transgene DNA for microinjection.

Overview:
Training is divided into three phases:
1. Discussion and lab experience on fertilized egg collection and transfer to pseudopregnant female mice.
2. Discussion and lab experience in microinjection of mouse embryos and transfer to pseudopregnant female mice.
3. Follow-up on pregnancies and genotyping

Preparation:
2. Practice in the fabrication of glass instruments used in transgenic mouse production.
3. Practice in the use of mouth pipettor and transfer pipets used to move mouse eggs.

Schedule:
Day 1 8:00- 5:00 fabrication of glass micro-instruments.
Day 1 8:00 - 5:00 collect eggs and transfer eggs to recipients
Day 2 8:00 - 5:00 workstation orientation, collect and microinject eggs
Day 3 8:00 - 5:00 collect eggs, microinject, and transfer injected eggs to recipients
Day 4 8:00 - 5:00 collect eggs, microinject
Day 5 8:00 - 5:00 collect eggs, microinject, and transfer injected eggs to recipients

In order to derive the maximum benefit from this training, trainees should plan to spend at least a full day (8 hours) in the Transgenic Core on scheduled training days.

Follow-up:
Egg transfer surgeries from the first two sessions will be evaluated in terms of the number of pregnancies and implantations that occur. Trainees will prepare tail DNA from any mice born from their microinjected eggs and determine if they are transgenic. Transgenic founders will be transferred to the trainee, at his/her request. This information will provide the means to evaluate the effectiveness of the training.
Discussion Papers


Additional Resources