

Embryonic Stem Cell Microinjections

Microinjection of embryonic stem cell (ESC) lines into mouse blastocysts service.

Keywords: [service](#) [microinjection](#) [ESC](#) [ES cell](#)

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The microinjection of mouse ESCs into 3.5 day old mouse embryos is performed to generate chimeric mice from genetically modified mESCs. This method is an essential step in the generation of precisely modified alleles (e.g. conditional, knock-in or null alleles). The ESC microinjection experiments are generally performed using 3.5 day old embryo derived from natural matings of C57Bl/6 mice. Pups will be born about 3 weeks after injected blastocyst are transferred to a recipient animal. Once hair color has established, percentage of chimericism is noted.


Please note that after the microinjected embryos have been transferred into the uterus of a pseudopregnant recipient animal, the animals become the financial responsibility of the investigator and are housed under his/her animal protocol number within the Vanderbilt Barrier facility.

Experimental Flow:

1. PI submits service request to VGER for microinjection through iLab:
https://vanderbilt.corefacilities.org/service_center/show_external/5102
2. Service forms are reviewed and approved by the Co-Directors of resource
3. Injections are scheduled, mice are ordered
4. Injections are performed, embryos are transferred to pseudopregnant females
5. Pups are born 17 to 18 days post-injection
6. Pups are weaned and chimeric percentages are determined by VGER staff at 3 weeks of age
7. Dams are serology tested at weaning.
8. DAC staff review serology results, approve the movement of mice and transfer all new chimeric mice to PIs mouse housing room at about 4 weeks of age.

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Attachments

 [blast_injections2.wmv](#) - Added on July 30, 2010 at 2:57 PM by Jill Lindner

Microinjection of mESCs into a mouse blastocyst using an XY clone laser

 [ES_Cell_injection.jpg](#) - Added on March 29, 2016 at 1:46 PM by Jennifer Skelton

microinjection of mESC into blastocysts

