

There are three methods routinely used when shipping either embryos or sperm for rederiving a mouse line within Vanderbilt.

Keywords: [transfer](#) [sperm](#) [rederivation](#) [IVF](#) [embryo](#)

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Options for the rederivation of mouse stocks.

- Frozen embryo rederivation.** This service can usually be scheduled within two weeks of receiving cryopreserved embryos and is the most efficient means of rederiving a line. Frozen embryos will be accepted at the 2- to 8-cell stage. The embryos will be thawed according to the protocol used by the lab that froze the embryos and washed numerous times before being transferred into a recipient female. Pups will be born approximately 19 days later. At 3 weeks of age, the PI will receive tail biopsies for genotyping, which must be completed before serological testing. Serological testing is routinely performed at 6 weeks of age. When these results have been obtained, usually by 7 weeks of age, the mice are moved to the investigator's room for housing.
- Fresh embryo rederivation.** This approach is similar to the frozen embryo rederivation above and is also an efficient means of rederiving a line. However, the performance of this service requires more planning and communication between the lab sending the embryos and the Vanderbilt Genome Editing Resource in order to prepare for the embryo transfer surgeries. Embryos can be shipped between the 2-cell stage to the morula/blastocyst stage for transfer. The pups will be born approximately 19 days after the embryo transfer. Again, at 3 weeks of age, the PI will receive tail biopsies for genotyping, which must be completed before serological testing. At 6 weeks of age, serological testing is done and by 7 weeks of age, the mice are moved to the investigator's room for housing.
- In Vitro Fertilization.** Another option for rederivation is in vitro fertilization (IVF) using frozen sperm. Performance of IVF and embryo transfer usually requires about a month of planning prior to the experiment. The day following the IVF procedure, the fertilized embryos will be washed and prepared for an embryo transfer into appropriate recipients. As above, once the embryos are transferred, pups will be born approximately 19 days later. At 3 weeks of age, the PI will receive tail biopsies for genotyping, which must be completed before serological testing. At 6 weeks of age, serological testing is done and by 7 weeks of age, the mice are moved to the investigator's room for housing.

For other rederivation or cryopreservation options, please visit: <http://labnodes.vanderbilt.edu/resource/view/id/489>

For additional information regarding the Vanderbilt Genome Editing Resource, please visit the website at: <https://labnodes.vanderbilt.edu/vger>