

DNA Microinjection

Core Responsibilities

The core will inject at least 125 fertilized FVB embryos with a DNA construct provided by the investigator. The surviving embryos will be transferred to recipient females. All resulting live pups will be transferred to the investigator after weaning and serology testing. We normally expect between 15 and 30 pups born with 20-30% being transgenic. If less than 15 pups are produced, the core will perform a second round of injection at no cost. The core does not guarantee transgenic mice but if you fail to obtain transgenic mice the core will repeat the injection at no charge if you can document that your screening procedure (PCR or Southern) is able to detect the transgene at a single copy level and you have an internal control. Please forward this information, a figure legend and a short description of the method to Andrei Golovko at agolovko@tigm.org for review.

Injections into embryos other than FVB (C57BL/6, etc.) can be done at an extra cost. Please note that efficiencies are lower.

BAC clones can also be injected at an extra cost. Please note that efficiencies are lower. Please contact the core to obtain protocols for preparing BAC DNA. You are advised to first check your BAC clone prep on a pulse-field/FIGE gel to verify the integrity of the BAC clone before delivery to the core. BAC DNA needs to be submitted to the core as a pellet under 70% ethanol.

Investigator Responsibilities

- Complete a Pronuclear Injection Service Request form.
- Provide information that the investigator has the necessary institutional animal and biosafety approvals for the project.
- Plasmid DNA should be prepared using the Qiagen EndoFree Plasmid Midi (Maxi) Kit or similar product. Provide at least 30 ug of digested DNA, detailed map of the construct and a picture of the DNA for injection with the desired band circled.
- **Provide documentation that a PCR or Southern detection strategy is in place that can detect the transgene at single copy levels when mixed with mouse tail DNA (see <http://www.med.umich.edu/tamc/spike.html>).**
- Report back to the core the number of transgenic mice generated.

Time Line for Pronuclear Injection

Day 1-7: Transgene fragment prepared for microinjection

Day 8: Microinject DNA and culture surviving embryos overnight

Day 9: Embryos transferred to recipient mice

Day 28: Pups born

Day 49: Pups weaned

Day 56-59: Mice transferred to the investigator after serology testing completed