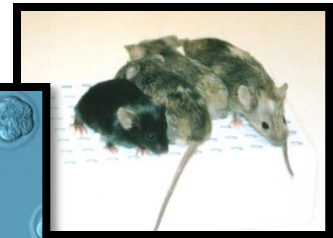
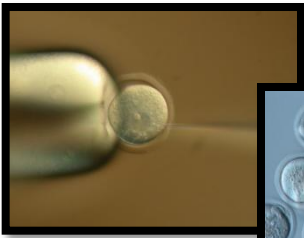


Transgenic and Gene-Targeting Facility

Melissa A. Larson, PhD, Technical Director
Jay L. Vivian, PhD, Scientific Director
University of Kansas Medical Center
3901 Rainbow Blvd, Kansas City, KS 66160



Abstract

The Transgenic and Gene-Targeting Facility at the University of Kansas Medical Center is located in the newly constructed Kansas Life Sciences Innovation Center on the KUMC campus. The mission of the Transgenic Facility is to provide services to KUMC investigators and the surrounding research community for the generation of transgenic and genetically modified mouse models.

The facility is equipped to offer a full range of services, including generation of transgenic mice via pronuclear injection, generation of chimeric mice via embryonic stem cell injection and gene targeting of embryonic stem cells. A range of support services are also offered, including cryopreservation of sperm, embryos and oocytes and assisted reproductive techniques such as rederivation and in vitro fertilization.

The facility also offers molecular biology services including PCR genotyping and purification of plasmid and BAC DNA for microinjection. Our operations are centralized with an SPF mouse facility in the KLSIC building, with dedicated wet lab space for embryo manipulations and cryogenics, cell culture space and a molecular biology lab.

The Scientific and Technical Directors at the facility have many years of experience in the generation and analysis of transgenic mouse models and work closely with investigators throughout the design and execution phases of the transgenic experiments. We have performed services for investigators at KUMC, the University of Missouri - Kansas City, Children's Mercy Hospital, the University of Kansas in Lawrence, Kansas City University of Medicine and Biosciences, and Kansas State University. We look forward to working with you on your next project!

Check us out on the web!

<http://www.kumc.edu/TGIF/>

Transgenic Mice

We can make gain-of-function transgenic mice by microinjecting your DNA construct into one-cell embryos. The injected embryos are then transferred to recipient females for development to term or cultured for in vitro study. The facility has successfully generated transgenic mice from constructs ranging in size from 3 kb to very large BACs and YACs.

Chimeric Mice

The TGIF can make chimeric mice for you by injecting your gene-modified ES cells into donor blastocysts and transplanting them into recipient females. We have successfully generated germline chimeras from cells targeted in-house, as well as cells from KOMP and EUCOMM.

Embryonic Stem Cell Culture

The TGIF can culture embryonic stem cells, electroporate your targeting construct and pick and propagate the selected clones. We can also receive cells from KOMP or EUCOMM for you and expand and karyotype the clones prior to microinjection.

Support Services

Cryopreservation

The facility can freeze and store sperm, embryos or oocytes from your mouse lines no longer under study, saving valuable shelf space.

In Vitro Fertilization

The TGIF can reconstitute a mouse line by inseminating oocytes from superovulated donor females in vitro with fresh or frozen sperm. The next day, two-cell embryos are transferred to recipient females for development to term.

Rederivation

The TGIF can surgically transfer embryos to pseudopregnant recipient females, resulting in live-born pups. Rederivation is most useful to establish clean mice when the founding colony is pathogen-compromised.

Molecular Biology Services

Genotyping

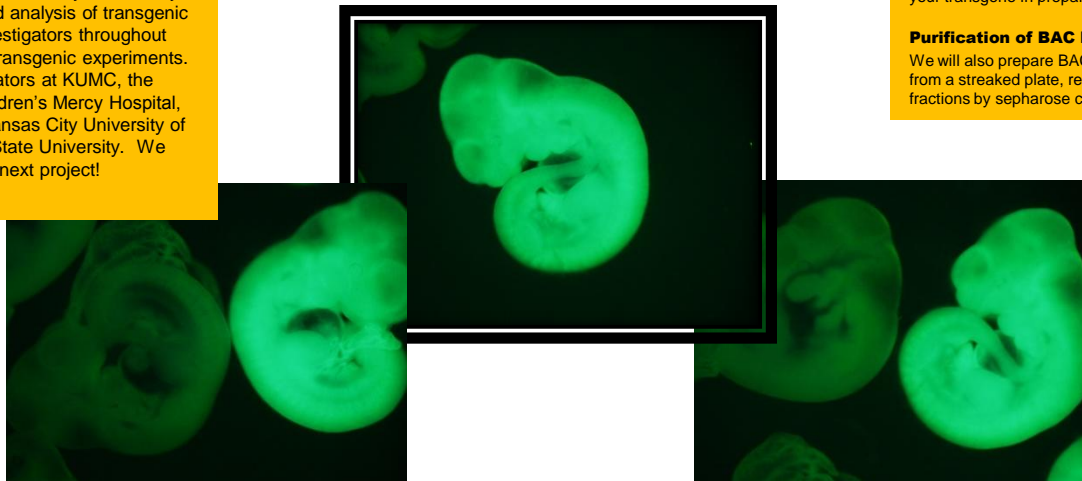
We offer the service of PCR genotyping of the mice we generate, as well as mice from your colonies. Just bring us a tail biopsy or ear punch!

Preparation of DNA Constructs for Microinjection

The facility will receive your plasmid DNA, restriction digest and gel purify your transgene in preparation for microinjection.

Purification of BAC DNA for Microinjection

We will also prepare BAC DNA for microinjection by growing your bacteria from a streaked plate, recovering DNA by NucleoBond kit, isolating fractions by sepharose column, filtering and quantitating.



Contact us!

Melissa Larson (913)588-1005
mlarson@kumc.edu

Jay Vivian (913)588-0341
jvivian@kumc.edu