



Transgenic Unit

Radislav Sedláček

radislav.sedlacek@img.cas.cz

Genetically modified mouse models have become a key tool in basic and biomedical research. The ability to engineer the mouse genome has greatly transformed biomedical research in the last decade. Crucial for this technology is the ability to control the expression of genes of interest. It is possible to increase or decrease gene expression, or eliminate the expression of a gene completely. Transgenic and gene knock-out/knock-in technologies have become important experimental tools for assigning functions to genes at the level of whole complexity of organism, creating models of genetic disorders, evaluating effects of potential therapeutic targets and drugs, and thus helping to answer fundamental issues in basic and applied research.

The Transgenic Unit at the Institute of Molecular Genetics (TgU) was established under the direction of Assoc Prof Radislav Sedláček in 2008/2009 to offer the research community at IMG and other cooperating institutions the opportunity to study the function of individual genes using mouse models.

Our services include pronuclear microinjection of DNA constructs into mouse zygotes for the production of transgenic founders; microinjection of targeted ES cell lines into morulas [8-stage cell embryo] to produce chimeric mice; mouse archiving [cryopreservation of embryos and sperm]; and recovery of live mice from cryopreserved embryos and sperm, analysis of sperm viability, re-derivation of mouse strains and lines, and others [see also our web page at <http://tgunit.img.cas.cz/>]. We also provide consultation and assistance services, and information on the design and use of genetically modified transgenic mice. All of our services are also available to external institutions and researches irrespective whether they are from academic or profit



Foster mother with chimeric pups



Implantation of embryos under SPF conditions



Pronuclear injection



Transgenic core facility



From left:
Sandra Potyšová, MSc [since 2010]
Radislav Sedláček, Assoc Prof, PhD / Head
Veronika Libová, MSc [since 2009]
Inken Maria Beck, PhD

Not on the picture:
Irena Placerová, MSc
Lenka Michalčíková, MSc [until 2010]
Jana Ježková, MSc [until 2009]