Centre for Transgenic Models
University of Basel – Mattenstrasse 22
Box 3350, 4002-Basel, Switzerland

University of Basel

Centre for Transgenic Models
CTM

DEVELOPING A REPORTER FOR THE OPTIMIZATION OF TRANSGENESIS STRATEGIES

At the centre for transgenic models (CTM), we design and generate transgenic mice for internal and external researchers. Our own research focuses on developing more efficient transgenesis strategies, refining reproductive techniques, and utilizing genetic engineering to increase animal welfare.

Much of our daily work focuses on the generation of transgenic animals using CRISPR-Cas9. In general, the efficiency of this system is very high. Unfortunately, this does not hold true for all cases: large insertions often remain challenging and some loci are more difficult to modify than others. In addition, complex, unanticipated on- and off-target modifications are commonly observed.

The goal of the envisioned master thesis project is to establish a reporter system, which can distinguish unintended frame shifts, deletions, and insertions occurring during the generation of CRISPR-Cas9 mediated knock-ins. We will then use the developed reporter system to evaluate the efficiency of alternative knock-in strategies and identify optimal conditions.

During this project, you can gain expertise in a variety of molecular techniques (such as cloning, PCR, and Western blotting), fluorescence microscopy, mammalian cell culture, and CRISPR mediated transgenesis. Let us know if you bring along additional skills and interests that you would like to extensity during your thesis.

Are you interested in learning more about this project, and/or do you have a general interest in reproductive technology and genetic engineering? If so, do not hesitate to contact me via mail: pawel.pelczar@unibas.ch. Please include a short description of your motivation, a CV and your transcripts.

Approximate Start:

Upon agreement

Contact:

Pawel Pelczar, PhD
pawel.pelczar@unibas.ch
Head of CTM University Basel
http://www.ctm-basel.ch/