

Transgenic services

Our lab technicians routinely carry out transgenic strain production, cryopreservation of embryos and derivation of new wild-type and genetically modified rodent ES cell lines. Working closely with the tissue culture service and the histology service, our transgenic facility maintains a high quality and efficient service. This has resulted in many high quality publications.

The transgenic facility is available for in-house and outside users. Please contact the Transgenic Unit manager Dr. Joe Mee (P.J.Mee@ed.ac.uk) or Val Wilson, v.wilson@ed.ac.uk, to discuss your specific needs or to request a price list.

The facility is located at the SCRM Building at Little France.

Cell potency assays

Surgical grafting of cells or tissues to neutral sites (kidney or testis capsule, subcutaneous or intramuscular site), to test developmental potential.

We offer

- Grafting of cells or tissues to an appropriate site
- Dissection and processing of tissue for histological staining or immunohistochemistry, using paraffin or cryostat sections as required
- Photomicroscopy and scoring of tissue differentiation

This service is offered in conjunction with our histology service.

Cryopreservation

Embryo and sperm cryopreservation provides security against loss of valuable strains and a low-cost means of holding strains over long periods for future use or distribution.

We offer

- Collection, freezing and storage of sperm or embryos in liquid nitrogen
- Test recovery - thaw and checking embryo viability of a sample - for quality control

Coming soon

- Ovary cryopreservation

ES cell line derivation

We have generated many new ES cell lines from wild type (129 and C57Bl/6) or mutant strain embryos.

We offer

- Immunosurgery and explant culture
- Genotyping of extraembryonic tissue or part of the explant if required
- Passage and freezing of new ES cell line
- Distribution of early passage, germline-tested ES cell lines

Morula aggregation

Chimeras with high ES cell contribution can be used to analyse the in vivo developmental potential of mutant ES cell lines and primary cells. We create these by an efficient aggregation procedure with diploid morulae.

We offer

- Morula aggregation of cells
- Embryo transfer to recipient mice
- Dissection of midgestation chimeras if required
- Histological analysis if required

Coming soon

- Tetraploid aggregation

Rodent strain rederivation

Transfer of embryos to recipient oviducts or uteri to rederive new lines as a specific pathogen-free colony, or as part of an accelerated backcross programme.

We offer

- Collection of preimplantation stage embryos
- Transfer to the uterus of appropriate recipient females

Gene targeting and transgenesis via ES cells

Modification of ES cells to produce new transgenic lines, generation of chimeras and germline testing.

We offer

- Advice on genetic modifications including inducible gene expression
- Electroporation of DNA constructs into validated germline-competent ES cells
- Selection, expansion and testing for modification of interest
- Chimeric mouse production
- Germline testing if required

Coming soon

- Preparation of targeting constructs
- BAC transgenic production via ICSI

Contact details

Dr Joe Mee
Transgenic Service Manager
MRC Centre for Regenerative Medicine

SCRM Building
The University of Edinburgh
Edinburgh bioQuarter
5 Little France Drive
Edinburgh, EH16 4UU

Telephone: 0131 651 9500
Fax: 0131 650 9501
Email: P.J.Mee@ed.ac.uk