VIENNA DROSOPHILA RESOURCE CENTER

VIENNESE BIORESOURCE WITH INTERNATIONAL IMPACT

The fruit fly *Drosophila melanogaster* has been an intensively studied model organism for more than 100 years and research using *Drosophila* has led to many fundamental discoveries in genetics, pathology, physiology, development and evolution. Even though the genomes of many organisms have been sequenced, the function of a large proportion of these genes remains to be determined. Around 75 % of known human disease genes have a recognisable match in fruit flies, making Drosophila a simple but powerful system for the study of human diseases. Today, genetic tools are available to express artificial genes in any tissue at any time, and RNAi sequences have been identified to knock-down individual genes with high specificity. Combining these two technologies allows researchers to study the link between a gene and its function.

The transgenic flies maintained at Vienna Drosophila Resource Center (VDRC) of Vienna BioCenter Core Facilities GmbH are a unique collection of fly stocks including the world's largest collection of *Drosophila* RNAi lines. The VDRC is the main *Drosophila* stock center in Europe and one of the top 3 worldwide. Our dedicated team has shipped over 1.3 million fly stocks to more than 2,500 registered labs in over 50 countries. Our service enables researchers around the world to focus on their experiments rather than fly mutagenesis, stock creation and maintenance. Our fly stocks are referenced in over 400 peer reviewed publications annually.

The VDRC currently maintains some 30,000 independent stocks in a highly organized fashion. All vials are labelled with barcodes and are linked to a database enabling quick access to all data relating to the stock. A diligent team of 'stock keepers' is responsible for the day-to-day care of the living fly stocks. Every four weeks, vials are 'flipped' onto a vial with fresh, high-quality food from our own Fly Food Kitchen. Our food is also made to order for fly groups in the Vienna region.

While the VDRC is famous for their RNAi lines, we have expanded also into other areas. Three important additions are collections of Gal4 'driver' lines, lines for CRISPR-mediated genome engineering and lines with multi-tagged proteins for live imaging, subcellular localization, and protein interaction experiments. We also facilitate large scale screens by offering the option for on-site screening and produce Fly Extract - an additive required for culturing specific insect cell lines.

Finally, we provide a stock keeping service to maintain and distribute private stock collections. We are always looking for new useful resources to include in our collection as a donation from and for the fly community. This way we ensure that the entire Drosophila community continues to benefit from easy access to relevant fly resources which helps accelerate their research.

VBCF VIENNA DROSOPHILA RESOURCE CENTER TEAM

SERVICES AND METHODOLOGIES

- **Fly stock distribution**
  - Transgenic fly lines (RNAi, GAL4 driver, tagged constructs, mutant alleles, reporters)
- **Fly food via VDRC Fly Food Kitchen**
  - Different media types with various plugging options

- **Fly stock keeping**
  - Integration of donated lines
  - Private stock keeping service
- **Plasmid DNA distribution**
  - Long hairpin constructs in pMF3 vector

RESOURCES

- **RNAi libraries** (largest collection worldwide)
- **Enhancer-GAL4 driver library** (restricting expression of a UAS line to a specific subset of cells or time-point)
- **Plasmids** (Hairpin constructs in pMF3 vector)
- **Fly Extract** (from OregonR adults for cultivating insect cell lines)

- **Tagged FlyFos TransgeneOme (fTRG) library** (Transgenic fly lines with protein tag for live imaging, subcelluar localization and interaction proteomics of gene product)
- **Heidelberg CFD CRISPR (HD_CFD) Library** (Transgenic fly lines for CRISPR-mediated genome engineering)

Fly stock maintenance

Fly stock storage room

Preparing embryos for injection

CONTACT
Vienna Drosophila Resource Center
Vienna BioCenter Core Facilities (VBCF)
https://www.viennabiocenter.org/vbcf/vienna-drosophila-resource-center/
lisa.meadows@vbcf.ac.at

Vienna BioCenter
CORE FACILITIES