

# VECTOR CORE

UNIVERSITY OF MICHIGAN MEDICAL SCHOOL

**The Vector Core** at the University of Michigan produces gene transfer vectors that facilitate the transfer of specific genes into either normal or aberrant cells. The Vector Core also provides advice to researchers regarding the optimal use of these systems. Gene transfer vectors require special handling precautions, and manufacturing systems that lend themselves to a Core structure that optimizes efficiencies of scale and cost to the research community.

The Vector Core provides a shared laboratory space for the construction, purification and characterization of recombinant vectors containing genes relevant to the study of disease models for use as *in vitro* and *in vivo* gene transfer reagents. These systems include both non-viral (expression plasmid) and viral (recombinant lentivirus, recombinant retrovirus, and recombinant adenovirus) technologies.

The expert staff collaborate closely with researchers to ensure the Vector Core provides the platforms our customers require, and to institute the use of new technologies. The Core provides high quality, cost effective products and project guidance to our researchers.

## Products & Services

- **Adenovirus** provides high expression, transient transfection to a wide variety of dividing and non-dividing cell types. Adenovirus is a widely used viral transfection vector for *in vivo* and *in vitro* applications.
- **Lentivirus** is a retrovirus that provides stable integration in both dividing and non-dividing cells. Lentivirus is used for the production of permanent cell lines and long-term modifications for *in vivo* and *ex vivo* applications.
- **Retrovirus (MMLV/MSCV)** provides stable integration in dividing cells. Retrovirus is used for the production of permanent cell lines and long-term modifications for *in vivo* and *ex vivo* applications.
- **Plasmid services**, including Adenoviral Shuttle Plasmids, Retroviral Plasmids, Lentiviral Plasmids and pUMVC Expression Plasmids.
- **shRNA library clones**: The Vector Core currently stocks all Open Biosystems pGIPZ V2L (Oligo ID #) clones and a few other lentiviral miRNA/shRNA clones, including pGIPZ V3L. Non-stock lentiviral clones (e.g., pGIPZ V3L, pLKO.1, pTRIPZ, etc.) will be purchased on request. The purchase price will be split evenly between the Vector Core and the investigator, and an additional \$30 service fee will apply to each order.

## Getting Started

To begin using the Core, all customers must fill out and submit a Service Request Form located on the Vector Core website. Note: all recombinant viral vectors must be registered with the University of Michigan Institutional Biosafety Committee (IBC). This registration is a safety precaution to protect our employees from possible safety concerns. The IBC committee is responsible for tracking recombinant DNA work at the University of Michigan.



Vector Core

Biomedical Research Core Facilities

3554 MSRB II

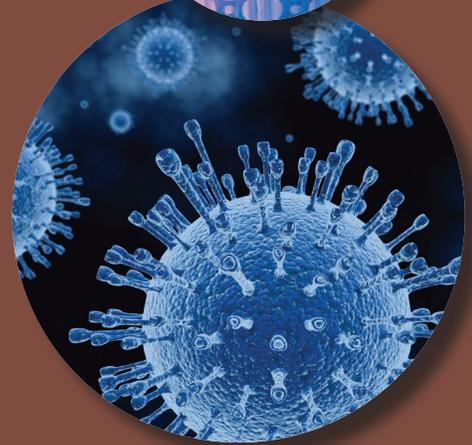
1150 W. Medical Center Drive

Ann Arbor, MI 48109-5688

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“Offering services that often go above and beyond gene transfer systems, the Vector Core’s knowledgeable staff is committed to providing high-quality, cost-effective products to our researchers.”

– Thomas Lanigan, Ph.D., Supervisor, Vector Core



### Training Opportunities

Core Director Tom Lanigan offers a virus safety-training course, sponsored by OSEH and the IBC. Individuals planning to work with viral vectors are recommended to enroll in the course “Working Safely with Viral Vectors” (course #BLS008) which is offered quarterly (February, May, August, November). The course is free to University of Michigan employees.

The Vector Core also provides protocol sheet downloads on their website, covering procedures such as “Cell Transduction with Virus,” “Virus Titering,” and more.

### Cost Estimates and Fees

The Vector Core offers a wide variety of products and services at cost for U-M investigators. Technical expertise and economies of scale help keep the price low with a quick turn-a-round time. For current costs and fees, please visit: <http://www.med.umich.edu/vCore/facts.htm>. Note: members of centers that support the Core (Cancer Center, MGPRC and MDRTC) may qualify for discounted pricing.

### Connect with Us

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### About the BRCF

The Vector Core was established in 1993 as part of an initiative between the Department of Internal Medicine and the leadership of the Cancer Center at the University of Michigan. The Biomedical Research Core Facilities, part of the University of Michigan Medical School Office of Research, is a collection of centralized labs and services offering state-of-the-art instruments, resources and expertise to biomedical researchers, investigators and educators.

For more information on the BRCF, visit [medicine.umich.edu /brcf](http://medicine.umich.edu/brcf)

### Biomedical Research Core Facilities

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