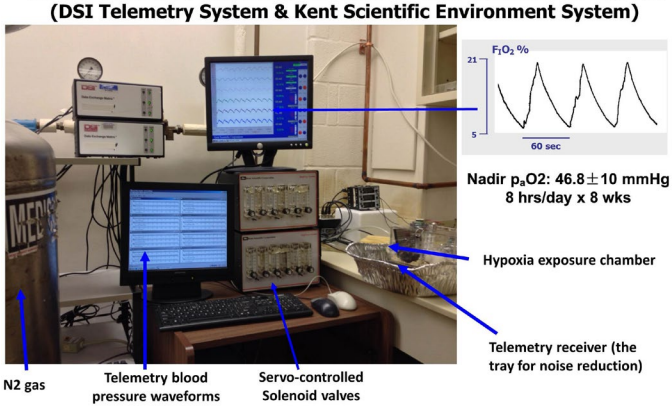
PHYSIOLOGICAL PHENOTYPING CORE

CIBR: Center for Innovative Biomedical Resources

CORE INSTRUMENTATION

- Vevo 2100 High-frequency Ultrasound System (VisualSonics), the most updated system that allows high-resolution imaging under B-, M-, color and pulse-wave Doppler mode, 3-D construct, and Vevo strain. (Figures: Mouse Echo; Tumor Imaging)
- Telemetry System (DSI) allows long-term recordings of blood pressure, biopotential (ECG, EEG, EMG), sympathetic nerve activity, and blood glucose concentration. It can be interfaced with flowmeters (Transonic), e.g., for simultaneously long-term recordings of blood pressure and cardiac output (Figure: Long-term BP and CO)
- MP150 Acquisition System (BioPac): 16-channel modular system interfaced with various transduces or amplifiers of pressure, volume, flow, biopotential, and temperature, as well as Mikro-tip catheters (Millar), flowmeters (Transonic), and cardiac output computer (Columbus Instruments)
- Environment System (Kent Scientific) allows customized exposure of hypoxia or hyperoxia (Figure: CIH setup)
- Pressure-volume loop system (Transonic) for comprehensive analysis of cardiac function *in vivo* or in isolated heart preparation
- Tailcuff Blood Pressure System (SC1000, Hatteras)

Chronic Telemetry Recordings in Rodents With Intermittent Hypoxia (DSI Telemetry System & Kent Scientific Environment System)



MISSION

The Physiological Phenotyping Core (PPC) provides cutting-edge phenotyping services with a focus on cardiovascular and respiratory systems. The core has a 10-year track record of services, including microsurgery, telemetry recordings, high-frequency ultrasound, and pressure-volume loop analysis.

CORE SERVICES

- Microsurgery and animal models: catheter and device implanting; coronary artery ligation; aortic banding; artery wire denudation or ligation; chronic hypoxia
- Biomicroscopy (high-frequency ultrasound) of the hearts, large or small vessels, tumors, or abdominal organs
- Acute *in vivo* measurements: hemodynamics, pressure-volume loop analysis, respiratory mechanics, sympathetic nerve activity
- Long-term recordings: blood pressure, aortic or organ blood flow, sympathetic nerve activity, ECG, EEG, EMG, temperature
- Equipment Rent

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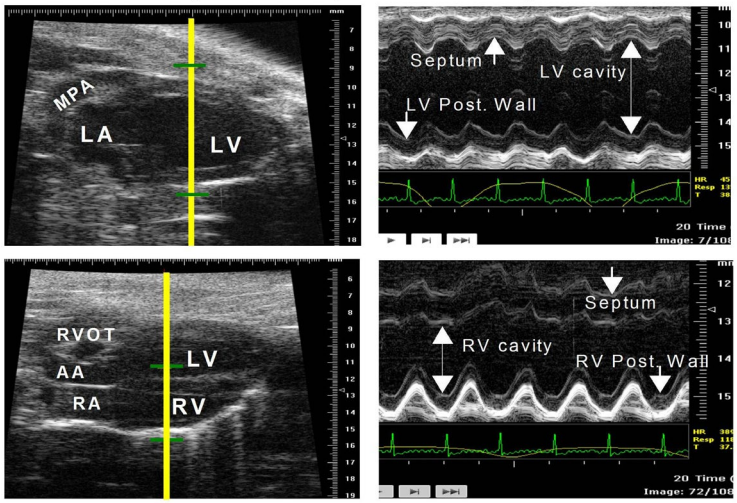
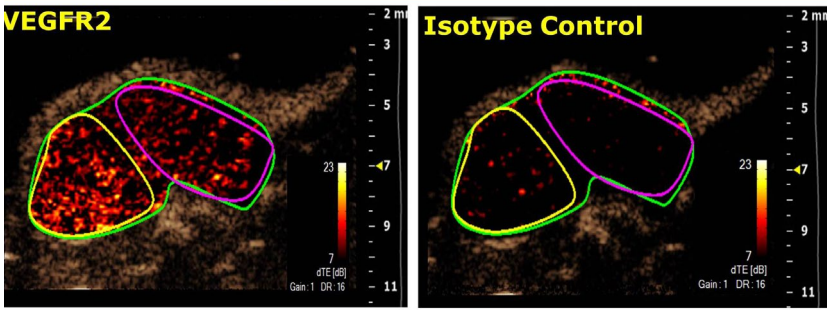
Echocardiography of Mouse Left and Right Ventricle (Vevo 2100, Visualsonics)



Targeted High-Frequency Ultrasound Imaging in Tumor (Vevo 2100, Visualsonics System)

Image Courtesy of VisualSonics.	Whole Tumor (Green)	Left Area (Yellow)	Right Area (Pink)
VEGFR2	7.56	10.00	5.79
Isotype Control	1.47	2.08	1.08



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