

EverBeat[®]

The EverBeat[™] perfusion system was developed for rapidly determining the effects of genes and drugs on cardiac function *in vitro*. The system is portable and sets up quickly on your lab bench. EverBeat[™] is configured so that each experiment is conducted with virgin tubing and connectors so that there is no contamination from previous experiments. The system is maintenance free, and there is no glassware to break.

EverBeat[™] provides stable perfusion of hearts, even those from 10 gram neonates, for > 6 hours. Whether modeling ischemia & reperfusion, evaluating the potential of new therapies, or performing gene expression studies, the EverBeat[™] rodent heart perfusion system is the best solution for whole organ function. EverBeat is ideally suited for preclinical safety and toxicology testing of drug candidates.

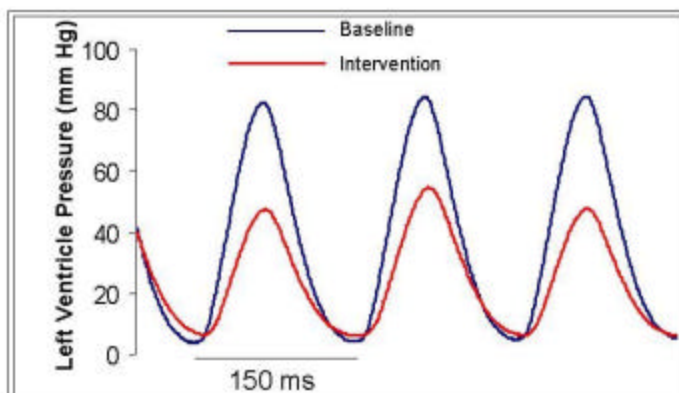
The isolated perfused heart ["Langendorff preparation"] provides the opportunity to separate systemic influences from cardiac functional characteristics. We have perfected the technique and instrumentation to provide stable rodent heart preparations that beat and remain functionally robust for several hours (EverBeat[™]!). The system provides a range of constant flows, from 0.6 ml/min for modeling low flow ischemia in mice, to 30 ml/min for hypertrophied rat hearts. Constant flow prevents alterations in coronary vascular resistance from confounding interpretation of myocardial functional changes resulting from perfusion of experimental drugs or modeling ischemia and infarction.

EverBeat[®] features:

The EverBeat[™] heart perfusion system records left ventricular (LV) function at 1000 Hz to provide optimal fidelity in describing the rapid LV functional indices in rapid beating mouse hearts (Peak systolic pressure, minimum diastolic pressure, dP/dt_{max} & dP/dt_{min}). The system includes analog input and bioamplification of high-fidelity pressure tracings, A/D conversion, and connection to Windows & MacOS computers.

Simulate ischemia, impose heat shock, determine effects of GPCR agonists & antagonists, test effects of human plasma to examine complement activity, and countless more applications!

- All components for long-duration stable isovolumic perfusion of hearts, including water baths & temperature control
- Balloon catheters for mouse & rat hearts
- Quick-change of perfusion lines
- High performance constant flow pump
- High-fidelity pressure transducer for recording LV pressure
- Data acquisition and hemodynamic analysis software



Publications and Applications:

1. *Enhanced gene expression of the Na⁺-Ca²⁺ exchanger attenuates ischemic and contractile dysfunction.* Am J Phys 279:H2846-2854; 2000.
2. *PR39, a peptide regulator of angiogenesis.* Nature Med 6:49-55; 2000.
3. *Cardiac dysfunction caused by myocardial-specific expression of a mutant thyroid hormone receptor.* Circ Research 86:700-706; 2000.