



OrchesTA™

GLP Rodent Infusion System

Founded in 1971, Instech Laboratories, Inc. is a privately-owned company focused on the design and manufacturing of equipment for rodent infusion, sampling and oral dosing.

We support our customers in academic and pharmaceutical research laboratories by offering our products in standard and custom configurations, and by making them available directly from us and a network of distributors worldwide. Our direct sales team covers North America, Europe and India.

Our U.S. headquarters, near Philadelphia, is configured for both design and manufacturing. It includes a machine shop and areas for mechanical, electronic and clean-room assembly. Our European office, outside Leipzig Germany, includes sales and customer service and a stock of selected products for rapid delivery.

Instech Laboratories, Inc.

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The OrchesTA™ Infusion system was developed in close collaboration with CROs to streamline preclinical rodent infusion toxicology studies. Built not around pieces of hardware or software, but rather the processes of GLP infusion studies, the system comprises validated control and monitoring software, a simple but robust wireless network and a modern clinical-grade syringe pump. Combined with the Vascular Access Button™ connection system, this represents the most capable GLP rodent infusion system in the world, with unmatched dose reliability, labor efficiency and animal welfare.

syringe pump

The OrchesTA™ model 100 syringe pump is a modern hospital pump with firmware that has been adapted for laboratory animal research. It can be used as a stand-alone pump or combined with an OrchesTA™ pump transceiver to create a network of pumps controlled by the OrchesTA™ Infusion Automation software.

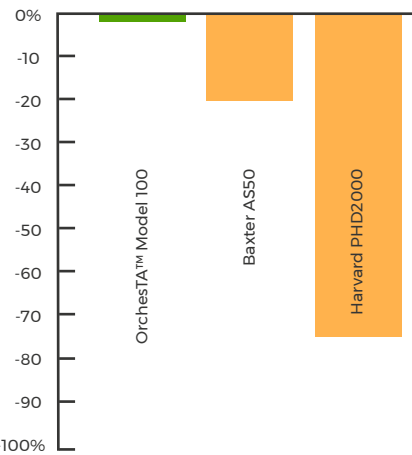
Features



Benefits

SUPERIOR OCCLUSION PERFORMANCE

Dose error (occlusion after 15 min of 1hr infusion, 2ml/hr, 3ml syr, rodents)



Why bother with an occlusion alarm on a rodent infusion pump?
Learn more.



MODEL 100 PUMP SPECIFICATIONS

| | |
|--------------------|---|
| Accuracy | ±3%, excluding syringe variations |
| Syringe sizes | 1-140ml |
| Syringe detection | Automatic |
| Syringe types | Becton Dickinson (plastic and glass), Monoject, Terumo, Nipro, others |
| Flow rates | 0.01 - 3,000ml/hr (depends on syringe) |
| Backup battery | ~12 hours |
| Occlusion sensor | In-line force transducer |
| Occlusion back off | Automatic |
| Dimensions | 24x10x15cm |
| Weight | 2.2kg |
| Power | 120VAC, 115mA, 50/60Hz or 240VAC, 90mA, 50/60Hz |
| CE Mark | Yes |

REQUEST
A QUOTE



software

Instech's OrchesTA™ software controls and monitors a network of up to 300 syringe pumps to streamline and reduce errors in large-scale rodent infusion toxicology studies.

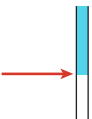


Features



AUTOMATED PROGRAMMING

Pump programming for multiple dose groups takes less than 20 minutes at the PC during study setup. Flow rates are updated automatically by importing new weight tables. As a result, OrchesTA™ can increase productivity by more than 100%. Furthermore, since each manual keystroke is a chance for human error, it can reduce the opportunities for dosing and documentation errors by more than 99%.



TEST ARTICLE TRACKING

This patented feature of the OrchesTA™ software calculates and records the exact time that test article enters the animal and the time that the dose is complete when switching from saline to test article and back to saline, eliminating tedious manual calculations. (Patent no. 8,394,077.)



MULTI-STEP INFUSION PROFILES

The software supports studies with loading doses and multiple infusion rates, even optional pauses.



EMAIL & TEXT MESSAGE ALERTS

Remote alarming reduces the amount of on-site monitoring required by valuable personnel. Sophisticated templates make sure the right staff member receives alerts in an appropriate timeframe.



CENTRALIZED MONITORING

All pumps are displayed real-time on a single PC monitor. Pump alarms are displayed on the monitor in red. Less serious alerts are yellow.



PK/TK SCHEDULING

OrchesTA™ simplifies complex planning of PK/TK blood samples by scheduling all samples and automatically adjusting saline purge rates so that test article is delivered to each animal at the intended time and at the prescribed rate.



AUTOMATED DOCUMENTATION

Validated for GLP and Part 11 compatibility, the software records every PC and pump interaction and system event with time/date, user ID and user explanation data, replacing all handwritten documentation and creating a robust audit trail. The software compiles infusion study data into numerous formatted final reports.



ROBUST WIRELESS NETWORK

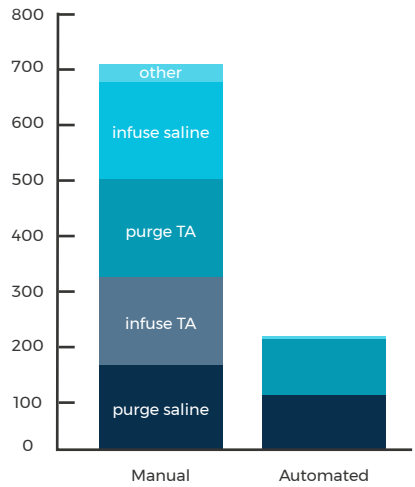
OrchesTA™ uses a secure network designed specifically for the challenges of animal laboratories. The IEEE 802.15.4 standard is meant for a high number of small devices, low power consumption, low bandwidth and ease-of-use—exactly what is needed for a network of infusion pumps.



Benefits

LABOR SAVINGS

Total labor for a 200 animal, 28 day study with one intermittent dose/day (hours)



Alexander A (Covance Laboratories), "Use of an Automated Infusion Pump/Software System to mitigate challenges inherent to Preclinical Infusion Studies," presentation at 2011 ITO Conference.

ERROR REDUCTION

| | Manual | Automated |
|---------------------------|---------|-----------|
| Software keystrokes | 0 | 99 |
| Pump keystrokes | 114,000 | 0 |
| Incorrect syringe loading | 12,000 | 0 |
| Incorrect Animal ID | 18,000 | 200 |
| Dose spreadsheet | 15,200 | 0 |
| Documentation | 48,000 | 0 |
| Total | 201,200 | 299 |
| Reduction | | 99.85% |

Agate J, Jacobsen A (Solomon Scientific), "Dosing & Documentation Errors in Preclinical GLP Infusion Studies," Jan 2011.



Download the white paper.

ORCHESTA™ SOFTWARE SPECIFICATIONS

| | |
|---------------------------|------------------------|
| Operating System | Microsoft Windows® |
| Pumps per study | Up to 300 |
| GLP compatible | Yes |
| 21 CFR Part 11 compatible | Yes |
| Wireless network | IEEE 802.15.4 |
| Wireless range | ~30m (can be extended) |
| Channels | 16 |
| Encrypted | Yes |

animal connection

Having the right components between your pump and the animal is just as critical as the pump itself. Your goal is to minimize the drop outs which can threaten your entire study, while maximizing animal welfare.

Dozens of studies have shown Instech's Vascular Access Button™ system to be superior to other methods of accessing rodent catheters, with benefits that are revolutionizing large-scale infusion studies.

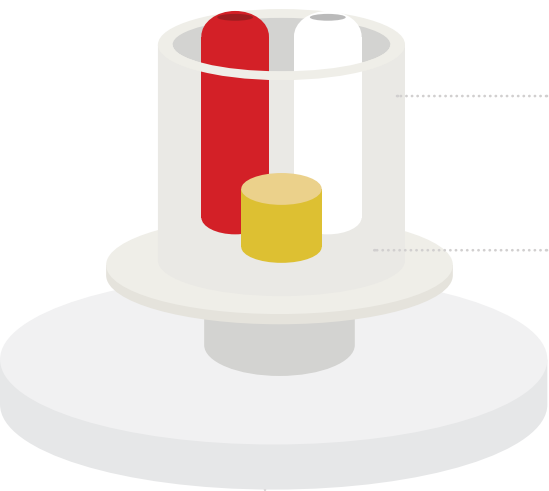
Systems are available for both mice and rats.

LEARN MORE
ABOUT THE VAB™



Features

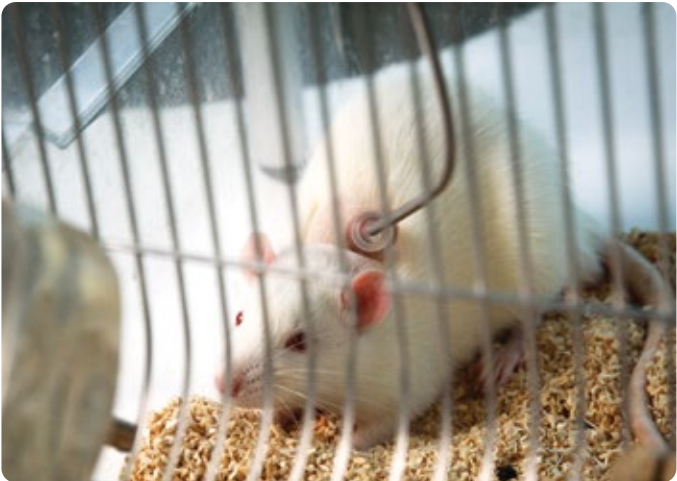
THE VASCULAR ACCESS BUTTON™



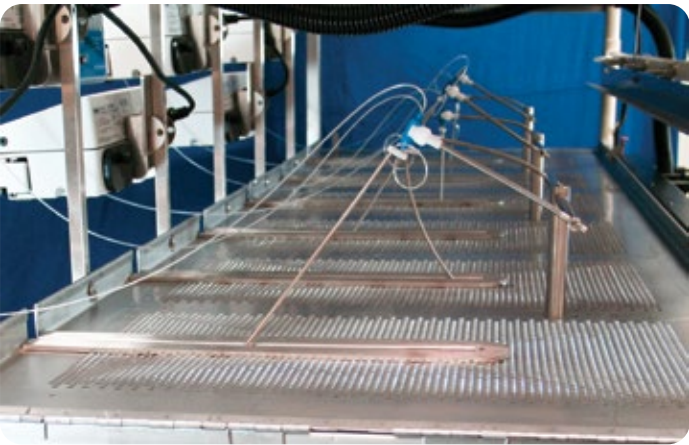
PinPort™ Access Technology creates closed system, critical for long-term patency.

Simple magnetic connection of tether and protective cap.

Subcutaneous connection of round tip catheter.



INFUSION CAGING



Swivels must be mounted above the cage in a lever arm that removes slack from the tether as the animal moves, and the cage must have no spots where the tether can get caught. Instech's spring-based lever arms for rats have a simple snap-in swivel holder and can be run through cage washers.

Benefits

EXTENDED PATENCY

With the combination of good surgical technique, subcutaneous round-tip catheters and the closed-system provided by the VAB™, expect months of patency from a rodent catheter. When not connected to a pump, there is no pressure to check patency more than once a week.

NO ADJUSTMENTS

Unlike harnesses or jackets, which require daily checks and adjustments to avoid animal welfare issues, buttons need only minimal maintenance.

GROUP HOUSING

When not connected to a pump, rats and mice with VABs™ can be group housed. This is not only a great welfare and space-savings benefit, but also can radically reduce the resources needed for intermittent infusion studies since animals can be cycled through a small number of pumps for dosing then returned to their home cage.



LOW-STRESS BLOOD SAMPLING

A two-channel VAB™ connected to a second catheter gives you the option to collect blood samples outside the cage, eliminating time-consuming and stress-inducing acute bleeds.