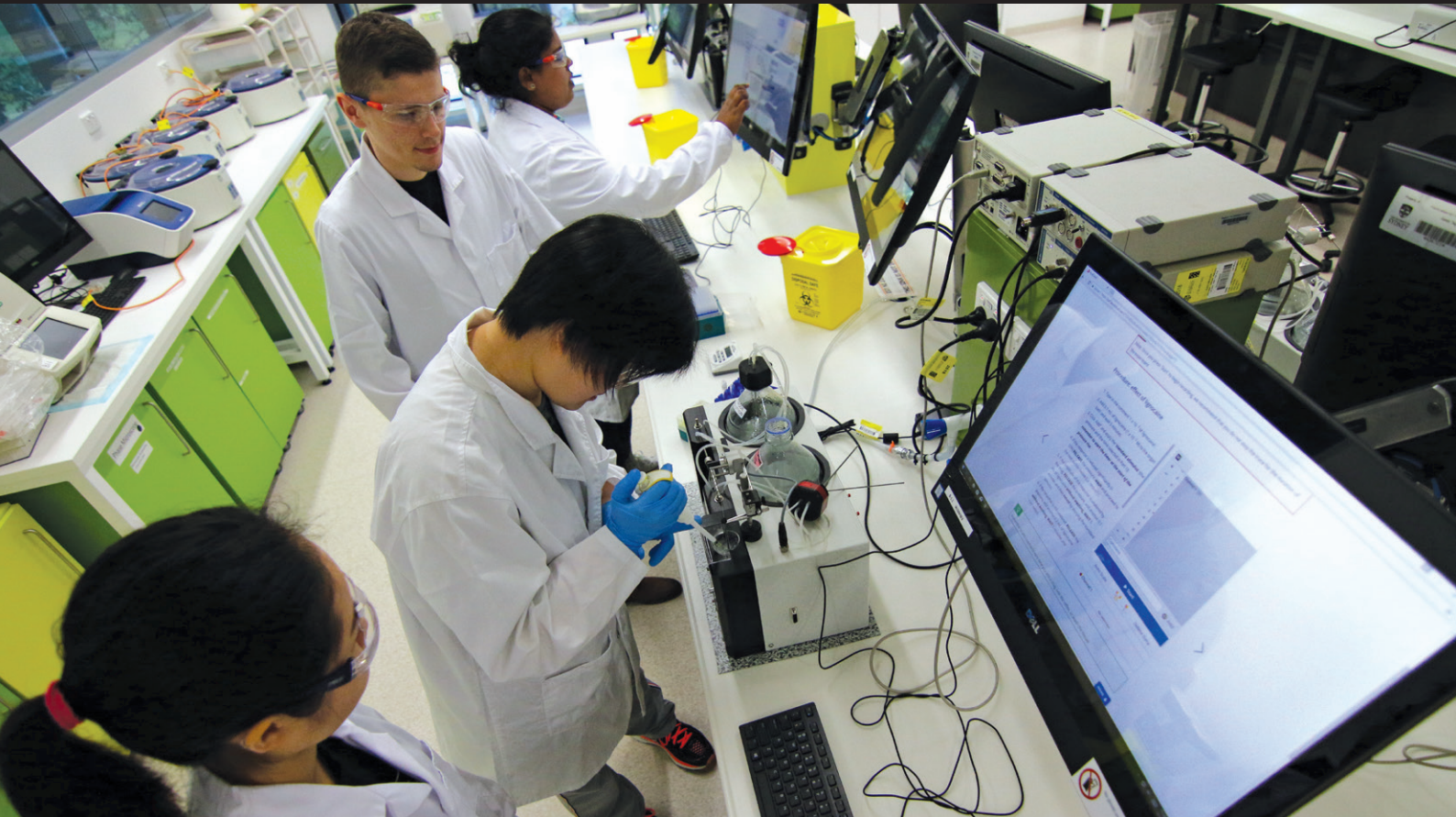




CREATE
SHARE
INSPIRE.

Pharmacology Collection Overview

Engage students with hands-on experiments and lessons



Lt is an online learning platform that includes ready-to-use content and hardware kits and systems for pharmacology courses.

Lt's Pharmacology Collection comes complete with professionally designed lessons and labs that explore ligand-receptor binding and dose-response relationships using a variety of different tissue preparations.

During labs, learners use our hardware teaching systems and kits for practical work that helps them connect core pharmacology principles with a true-to-life lab experience.

Professionally developed lessons

Lt's latest Pharmacology Collection comprises of 14 modules.

Each module explores pharmacological phenomena including agonists, antagonists, and dose-response relationships using a variety of different tissue preparations. Use Lt's pre-prepared data to minimize animal use.

Selected modules also include Pre-Lab Prep material. This lets students walk into the lab with an understanding of key principles, maximizing their engagement and freeing them up to focus on linking scientific theory with practice.



Improved efficiency



Increased student engagement



Improved results in theory and clinical practice



Increased student pass rates

"We're able to engage our students in so many ways because of the interactivity of Lt - they love it"

- **Dr Tina Hinton**,
Senior Lecturer: Pharmacology,
University of Sydney, Australia

Creating a custom education system is easy:



Education kits and transducers

+



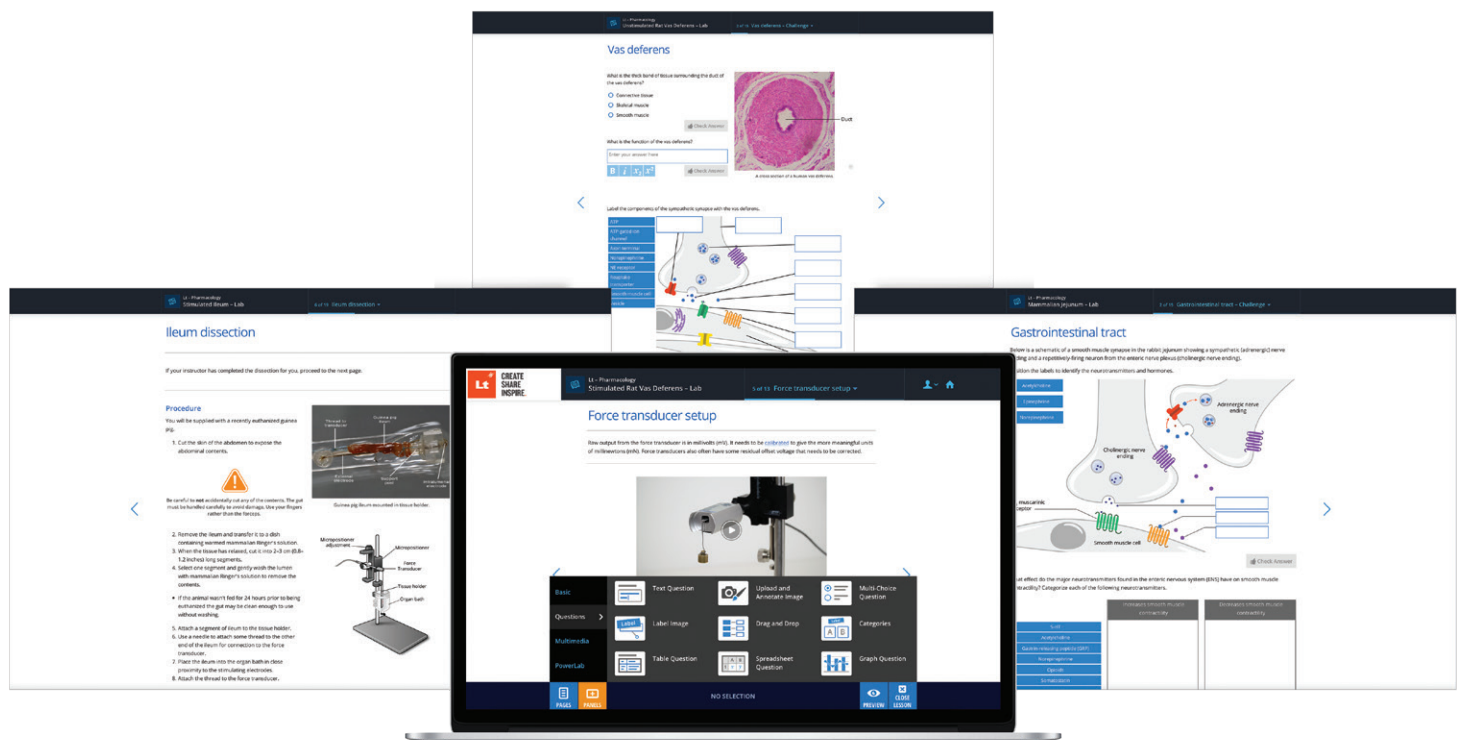
High performance PowerLab data acquisition

+



Active learning software and multimedia content





Pharmacology Collection

14 MODULE COLLECTION

Modules may include: Tutorial • Pre-Lab Prep • Lab

Airways Resistance

Measure the effects of histamine and acetylcholine on airway contraction, using guinea pig trachea dissection to stimulate asthma.

Chick Biventer Cervicis

Use the isolated biventer cervicis muscle from a chick to investigate how the curare poison affects muscle contraction, and which drugs may work as an antidote to curare.

Mammalian Atria

Examine how isoprenaline, propranolol, acetylcholine, atropine, and physostigmine affect the frequency and strength of myocardial contraction, using guinea pig atria.

Mammalian Diaphragm

Measure changes in neuromuscular transmission in an isolated phrenic-innervated diaphragm under the effects of suxamethonium, tubocurarine, and edrophonium.

Stimulated Ileum

Investigate how codeine, naloxone, naltrexone, norepinephrine, and acetylcholine affect gastrointestinal motility, using guinea pig ileum preparation.

Stimulated Rat Vas Deferens

Test the effects of presynaptic drugs, like noradrenaline on synaptic transmission. Students can also investigate the effects of a range of adrenoceptor agonists and antagonists.

Mammalian Jejunum

Apply repetitive electrical stimulation to the sympathetic nerves of the isolated rabbit jejunum, inhibiting its rhythmic output from the enteric nerve plexuses and thus, reducing gastrointestinal motility.

Mammalian Uterus

Examine the effects of a variety of drugs (oxytocin, epinephrine, high potassium solution, salbutamol, and propranolol) on a stimulated mammalian uterus preparation.

Mammalian Heart

Use an isolated rabbit heart to investigate the effects of epinephrine, norepinephrine, isoproterenol, isoprenaline, acetylcholine, lidocaine, ouaban and a low potassium solution on heart rate and the force of contraction.

Toad Rectus Abdominis

Use an isolated toad rectus abdominis muscle to investigate the effects of tubocurarine and suxamethonium on muscle contraction stimulated by acetylcholine application.

Unstimulated Ileum

Examine the effects of a variety of drugs on the unstimulated guinea pig ileum preparation and explore the effects of two mystery drugs to determine their mechanism of action.

Vascular Smooth Muscle

Use arterial rings from a pig coronary artery to explore some drug effects. Arterial rings can be used to demonstrate classical responses to autonomic drugs on vascular smooth muscle. Arterial rings can also be used to show the recently-discovered role of the endothelium in modulating vascular responses.

Unstimulated Rat Vas Deferens

Use an isolated rat vas deferens to investigate the effects of alpha adrenergic receptor agonists and antagonists, and drugs that affect the amount of norepinephrine in the synaptic cleft.

Vascular Resistance

Perfuse the isolated hindquarters of a rat at a constant flow. From the changes in pressure required to maintain this flow, the vascular resistance is recorded.



**PTK23-D
Pharmacology Kit II (Dual Heating)**

Suitable for conducting isolated tissue and pharmacological experiments. Ideal for passive and stimulated isolated tissue preparations, including drug titrations, drug metabolism and kinetics, dose responses, washout experiments, muscle force and stress measurements.

Recommended:

Lt or Lt LabStation: Pharmacology
PowerLab 26T or 15T

Kit contains:

- Radnoti Student Teaching Bath System:
 - 25 mL Single Tissue Organ Bath Chamber
 - Lab Stand Support Rod
 - Lab Stand Base
 - Glass tissue hook (for tissue strips)
 - Glass "L" Lower supports (for vessels <20mm)
 - Triangle-Shaped Upper Supports (for vessels <20mm)
- STB Hot Plate Universal
- Circulation Pump
- Transducer Positioner
- Teaching Force Transducer (0 - 50g)



**PTK28-D
Isolated Heart Kit (Dual Heating)**

Suitable for measuring the isometric force from a small, isolated perfused (Langendorff) heart. Ideal for conducting pharmacological investigations using the Langendorff technique on an isolated small animal heart (mice, rat, guinea pig or rabbit).

Recommended:

Lt or Lt LabStation: Pharmacology
PowerLab 26T or 15T

Kit contains:

- Radnoti Student Heart System:
 - Student Heart Chamber (100mL)
 - Aortic Cannula Tip (22 Gauge) for mouse hearts
 - Aortic Cannula Tip (14 Gauge) for rat/guinea pig hearts
 - Aortic Cannula Tip (Glass, 3.0mm) for rabbit hearts
 - Heating Coil (10mL) with Bubble Trap (5mL)
 - Dual heating temperature maintenance system
- Teaching Force Transducer (0-50g)
- Manipulator



**PTK13
Pharmacology Kit**

Suitable for conducting isolated tissue and pharmacological experiments. Ideal for dose-response pharmacological investigations on isolated tissue.

Recommended:

Lt or Lt LabStation: Pharmacology
PowerLab 26T or 15T

Kit contains:

- Single Chamber Organ Bath (25mL)
- Bridge Pod
- Teaching Force Transducer (10mg-25g)



How can Lt help?

Educators

Easy lesson authoring

Building media-rich lessons is simple. Drag-and-drop a range of content types to create interactive exercises, including multiple choice questions, short form written answers and image annotation.

Collaborative

Share content and workload with your fellow educators and teaching assistants. Set varying levels of access to allow others to review content, add content, or publish revisions online.

Flexible grading

Automatically grade quizzes while keeping the flexibility to add feedback and positive reinforcement, and manually grade written assessments.

Onboarding

Our Instructional Design team can convert and edit your existing content and lessons to make them even better in Lt.

Administration

Simple setup

Lt needs only an internet browser to allow course administration, authoring and publishing. Our data acquisition app, used for sampling, installs in 30 seconds.

Analytics

Our analytics allow you to view class progress in each lesson and across your course, and provide valuable insights about where and how students are interacting with course material.

Secure and scalable

Totally secure, Lt is hosted on Amazon Web Service's encrypted servers with guaranteed 99% uptime and the ability to maintain speed as more students login to Lt.

Students

Learn anywhere

Lt's cloud-based platform means students can learn on almost any device that connects to the internet. Whether they use iOS or android, tablet, mobile or laptop, lessons will be resized and optimized to look great.

PowerLab integration

In the lab, students can record and view their own physiological signals live on screen with PowerLab and sampling panels in Lt that can record Pulse, Spirometry, ECG, Blood Pressure and more.

Learn from real patients

For future health professionals, our patient cases allow students to follow a real patient from initial presentation to diagnosis and management. Expert healthcare professionals provide their views throughout the journey and students can practice note-taking and reflection.

Future proof

Lt is automatically updated with new features by our team of engineers, developers, and education specialists.

Getting started with Lt

Custom training and specialist support

Whether you need help with Lab installation and setup, IT training, Lt training or specialized support, we can get you up and running even faster with an add-on package of training and support services.



Try Lt now for free

Demo a selection of lessons and labs
adi.to/lr

Visit our website adinstruments.com/education or contact your local ADInstruments representative for more information

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AUSTRALIA Tel +61 2 8818 3400 | Email info.au@adinstruments.com
NEW ZEALAND Tel +64 3 477 4646 | Email info.nz@adinstruments.com



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