

# HMSTrust ANALYTICAL LABORATORY

Based at the Monash Institute of Pharmaceutical Sciences in Parkville, the HMSTrust Laboratory is an open access analytical laboratory which offers sophisticated physical and chemical characterisation techniques to complement research and overcome challenges faced in modern drug development.

## SPECIALIST SERVICES

Using our extensive array of instrumentation and analytical expertise, the HMSTrust Laboratory is able to provide tailored solutions for your analysis needs. We can:

- advise on appropriate analytical techniques and methodologies
- assist your staff to develop and validate an analytical method
- have an HMSTLab analyst take care of your analysis from start to finish

## EXPERTISE

The HMSTrust Laboratory features a comprehensive suite of instruments including advanced FTIR, Raman, XRD, GC/MS/MS and LC/MS/MS capability for stability assessment, complete API characterisation or identification of unknown components in pharmaceutical packaging and formulations. Under our flexible open access arrangements, researchers are able to choose an access model to suit their individual needs. All instruments are maintained under a Quality Management System with regular verification of performance.

## WORKING WITH US

- Direct lab access
- Fee for service
- Analytical consultancies
- Training

## KEY INSTRUMENTATION

### Chromatography and mass spectrometry

Our triple quadrupole LC/MS/MS instruments are the most sensitive in the Shimadzu range. The 8030 and 8050 mass spectrometers are linked to UHPLC systems for optimum chromatography and reduced run times. Our HPLC systems offer a variety of detection options including multi-angle light scattering, radiometric, UV-visible, photodiode array, fluorescence and refractive index.

### MALDI TOF TOF

Characterisation of macromolecules such as proteins and polymers can be performed on the Shimadzu 7090 MALDI TOF-TOF. The MALDI is also capable of imaging without the need for drug labelling, providing opportunities for assessing drug disposition, metabolism and targeting directly in organs and tissues.

### Microscopy, spectroscopy, thermal, XRD and moisture analysis

PerkinElmer DSC and TGA instruments are available for the thermal analysis of materials. These instruments are complemented by a Raman probe and microscope. The TGA

can be coupled with an FTIR spectrometer for greater molecular insight, and can be further connected with a GC-TOF-MS for compound identification against a spectral library. The FTIR is also coupled with an FTIR microscope to produce infra-red images of heterogenous surfaces.

A Shimadzu XRD-7000L X-ray powder diffractometer is available for crystallographic characterisation and assessment. A polycapillary parallel X-ray optics system allows examination of complex systems with irregular geometry, including intact pharmaceutical tablets, with markedly improved signal-to-noise ratios.

Our Metrohm Karl Fischer moisture analyser is capable of volumetric and coulometric titration to determine any water content from 0.001 to 100 per cent.

### Automated liquid handling

We make sample preparation easy with the Janus Integrator robotic liquid handler. Liquid transfers can be performed in a multi-tipped mode from any combination of laboratory containers including 384 and 1536-well formats for complete assay automation.

#### HMSTrust LABORATORY

381 Royal Parade, Parkville campus

#### Associate Professor Michelle McIntosh

Director

T +61 (3) 9903 9531

E michelle.mcintosh@monash.edu

#### Dr Phil Wright

Platform Manager

T + 61 (3) 9903 9558

E phil.wright@monash.edu

[platforms.monash.edu/hmstlab](http://platforms.monash.edu/hmstlab)