



University
of Dundee

Faculty of Life Sciences

Facilities for Industry use



Our core infrastructure is first class. Our facilities have contributed to local and global studies of significance contributing to our reputation as a world-leading institution. You can use our resources to drive and develop ambitions and projects to successful conclusion.

When you work with us you are in safe hands. Our advanced facilities are operated by our team of international technology experts who use the latest equipment to ensure that we deliver results that meet and surpass partner expectations.



Faculty of Life Sciences
University of Dundee

Talk to us about how our facilities can help you develop your ideas.

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Research Facilities

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All prices and information contained in this booklet are accurate as of May 1st, 2024. However, prices are subject to change. Please verify pricing with our team for the most up-to-date information. Please note that the VAT is not included in the prices represented and will be added separately to your invoice or transaction.

FingerPrints

PROTEOMICS

Welcome to our state-of-the-art proteomics facility at the University of Dundee, where we offer cutting-edge capabilities in proteomics and mass spectrometry. With a long-established reputation for providing efficient and reliable services, we support researchers both within the University and beyond. Our expertise extends to offering advice and services to academic and industrial clients worldwide, making us a premier destination for advanced proteomic research.



General Proteomics Services (sample preparation advice and gel analysis)

SDS-PAGE (max 4 samples per gel)	£147
Peptide Sample Clean Up	£48
Peptide Desalting (C18)	£60
S-TRAP Processing (generate peptides from protein sample)	£90
High pH Fractionation	£465
ESI-MS (Intact Mass Analysis)	£225
Phosphopeptide enrichment (Ti 4+ IMAC HP or Zr 4+ IMAC HP)	£150

Protein Identification by 1D nanoLC-MS-MS

In-Solution/In-gel Protein ID - Standard Service (Q-Exactive Plus 60 min DDA run)	£375
In-Solution/In-gel Protein ID - Enhanced Service (Q-Exactive HF/Fusion 120 min DDA run)	£504

Phosphorylation Site Mapping (Single Protein and Global Phosphoproteomics analysis)

Single Protein Phosphomapping	£504
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Label Free Quantitation via Data Independent Acquisition (DIA)

Global Protein Quantitation via DIA (uBCA/S-TRAP/PepQuant/nLC-MS-MS(2hr DIA-LFQ) / Data Analysis via Spectronaut or DIAnn)	£519
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School of Life Sciences and MRC PPU are the first UK recipients of three state of the art **Orbitrap Astral** Mass Spectrometers.

With faster throughput, deeper coverage, higher sensitivity, and accurate and precise quantitation; these Mass Spectrometers dramatically expand the scale and scope of future and ongoing proteomic and clinical research.

Isobaric Quantitation (TMT 6/10plex/TMTpro 16/18plex)

6-18plex TMT Workflow (uBCA/S-TRAP/PepQuant/TMT Labelling/Incorporation Checks/Pooling+Desalt/High pH Fractionation/Fraction Pooling/nLC-MS/MS*/Data Analysis (MaxQuant)

£10,000+

*MS2 or SPS-MS3 or SPS-MS3+RTS (TMT)

Additional Services

Targeted MS based Analysis (PRM and MRM)

POA

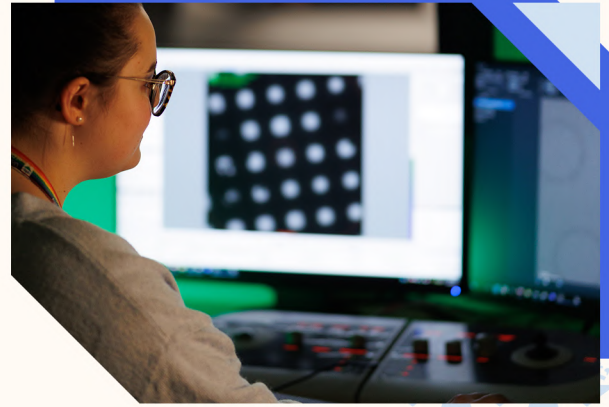
Additional in-depth data analysis: Interactive Volcano/MA plot

POA

Cryo-Electron Microscopy

Our facility is primarily aimed to provide a range of techniques:

- Single particle analysis of biomolecules
- Electron diffraction (MicroED) to provide structure solution for small molecules and proteins
- Basic Tomography for imaging cellular structures



Access to the newly upgraded CryoEM facility will be charged per session

Screening session

£4,300

Data collection session

£4,200

Sample preparation

We have a sample prep lab that has been established to provide users with the tools they need for successful sample preparation. We provide access to our glow discharge system, a FEI Mark IV Vitrobot for plunge freezing, and liquid nitrogen dewars for short-term sample storage.



We are equipped with a state-of-the-art Thermo Scientific **Glacios**, a 200kV X-FEG cryogenic transmission electron microscope (CryoTEM) optimized for Single Particle Analysis (SPA), electron tomography, and micro-electron diffraction (microED).

Combined with the Thermo Scientific **Selectris Imaging Filter**, which enhances TEM image contrast, this system enables researchers to quickly obtain high-resolution, atomic-level structures, unlocking new biological insights.

Data Analysis Group (DAG)

We collaborate on projects covering all aspects of bioinformatics and data analysis, ranging in size from those requiring a few hours work to those requiring a dedicated postdoctoral researcher hosted in the group.

We offer training through a series of modular courses ranging from Introductions to Linux, through High-throughput Sequence analysis to modules dedicated to the analysis of different techniques such as RNA-Seq and small genome assembly.



Sequence Analysis

£150/h

RNA-Seq (including single-cell techniques, splicing and methylation)

ChIP-Seq

ATAC-Seq

Variant Analysis: Single Nucleotide Variants (SNVs), Insertions/Deletions (INDELs), Structural Variations (SVs)

Genomic methylation analysis

Genome Assembly and annotation

Metagenomics/Microbiome analysis

Comparative genomics

Proteomics

£150/h

DIA/DDA approaches

Label free/TMT/iTRAQ analysis

Software/Interface Development

£150/h

Development of bespoke (Tools, Web interfaces, Database)

Pipeline/Automated workflow development and implementation



MRC PPU Reagents and Services

For Scientists, From scientists:

As one of the world's leading centres focused on cell signalling pathways we are happy to provide access to the very same reagents and services used by the MRC Protein Phosphorylation and Ubiquitylation investigators to accelerate research worldwide.



cDNA Cloning

POA

cDNA clone construction - designed to suit your requirements

Standard backbones provided if required

Quality control - full sequencing of the expressed open reading frame

Protein Production

POA

Protein Expression - in E. coli or Insect cells

Protein Purification - of tagged recombinant protein to high purity

Quality Control - SDS-Page analysis and Tryptic Mass Fingerprinting

Antibody Production

POA

Antigen Selection - help and advice to produce the best protein or peptide antigen for your needs

Antibody Generation - polyclonal antibodies raised in sheep giving the advantage of a large yield

Specialists in phospho antibody production

Affinity purification from Serum



Comprehensive collection of reagents available

- Antibodies
- Proteins
- cDNAs
- Inhibitor compounds
- Other tools and reagents

We offer several different screening platforms providing cost effective services with highly competitive pricing. Extensive service provision to over 30 Pharmaceutical and Biotechnology companies and over 75 academic drug discovery units worldwide.

Kinase Profiling Service

POA

140 protein kinase in the premier panel

Additional kinases available for counter-screening

Gold standard radioactive filter-binding kinase assay

DUB Profiling Service

POA

MALDI-TOF Mass Spectrometry DUB assay

50 DUBS available for selectivity testing or single target screening

E3 Ligase Profiling Service

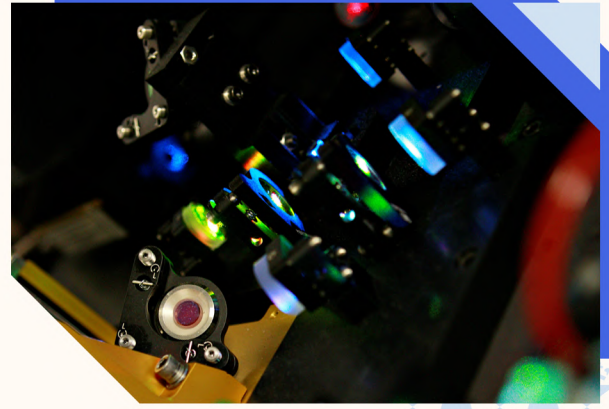
POA

MALDI-TOF Mass Spectrometry E3 ligase assay

Extensive panel of E3 ligases available

Flow Cytometry and Cell Sorting

Our state-of-the-art facility offers comprehensive services tailored to meet the diverse needs of our clients. We provide instrumentation and high-quality training for researchers who wish to use flow cytometric technology in their research. We also provide on-going technical support and advice in experimental design and data analysis. Whether you're exploring fundamental cellular mechanisms or developing innovative therapies, our facility is equipped to meet your flow cytometry needs with precision and efficiency.



Provided services

Cell sorting (FACS)	£200/h
Training (for self-use of analysers)	£200/1.5h
Use of analysers	£75
Sample analysis service (by Facility staff)	£150/h
Data analysis	£150/h
Advice and expertise	£150/h



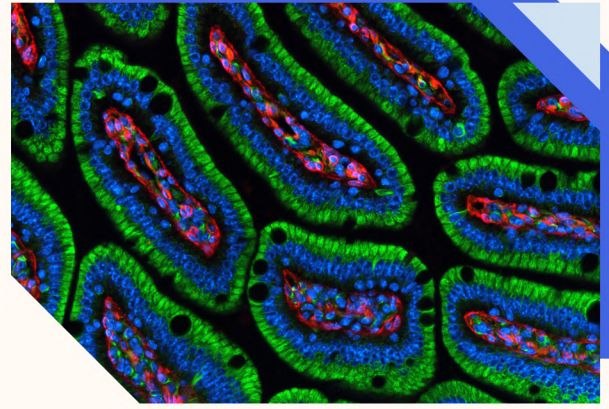
The **ID7000 Spectral Cell Analyser** is the latest addition to our instrument portfolio. It supports high-parameter flow cytometry by delivering comprehensive information about heterogeneous cell populations, with high sensitivity to detect dim and rare populations.

It can be configured with up to 7 lasers and 186 detectors, the most of any flow cytometer available today. The ID7000 cell analyser expands multi-colour analysis capabilities from the previous best option of 30 colours to 44, allowing for up to 16,000 times the information collecting capacity in principle.

Dundee Imaging Facility

We provide light and electron microscopy resources, with a central hub in Life Sciences and facilities in Science and Engineering and on the Ninewells campus.

The facility houses a range of advanced fluorescence imaging systems, all are equipped for live cell imaging. We cover a wide range of applications including multi-wavelength 3D imaging of fixed material, live imaging of cells, tissues and embryos, FRAP, FRET, DNA damage and laser ablation.



Imaging

Slide Scanning	£61/h
Widefield	£73/h
Confocal	£95/h
Electron Microscopy	£215/h
Data Analysis	£150/h



Zeiss Axioscan 7 - Whole slide scanning system

Axioscan 7 addresses both the need for reliable 24/7 scan performance as well as highest imaging quality across a multitude of applications by combining continuously high scan speeds and simple operation with application-specific customization options.

Brightfield
Polarised Light
Multi-Channel Fluorescence
100 slide capacity



NATIONAL PHENOTYPIC SCREENING CENTRE

Experts in high-throughput phenotypic screening. We provide quantitative, image-based readouts of cell and tissue models to measure the effect of molecular perturbations on cell and/or tissue models of biological systems and functions.



Multi-Well Plate Imaging

Widefield or spinning disk confocal microscopy on 96- and 384-well plates. Single plate or multi-plate imaging projects welcome

Widefield £50/h

Confocal £85/h

Image Analysis Services

Obtain fully analysed, single-cell level data from high-throughput imaging experiments

Set-up from £750

Ongoing from £300/expt

Liquid Handling Services

Robotic liquid handlers for:

- Acoustic liquid transfers (Beckman Echo): highly accurate and very low volume (suited to arrayed screening approaches, dose response experiments, combined treatments, or Cherry Pick)
- Robotic liquid handling platform (Agilent Bravo) for tip-based transfers on multi-well plates
- Cell staining protocols with: high accuracy reagent dispensers (Formulatrix Tempest); fast plate washers (Agilent 405LS and 406FX); cell and reagent dispensing (Multidrop Combi)

**Echo: £50/hr Self-Use
£150/hr Facility Staff**

**Bravo: £15/hr Self-Use
£115/hr Facility Staff**

“Standard” staining protocol from £400



Automation platform for high-throughput biology

■ Liquid Handling

- Fully automated, multi-plate protocols
- Reagent addition
- Plate washes

■ Compound dosing

- Highly accurate
- Very low volume

■ Plate Storage

- Large capacity
- Live cell assays

Access to Compound Libraries

Commercially available compound libraries with known structures and targets (1280-5000 compounds), for biological insight and/or tool compound discovery. Diversity Sets can be discussed.

**£750 - £2000
per library**

Assay Services

Services from assay development to full drug (or other perturbation) screening project, Structure Activity Relationship (SAR) support. High-throughput screening supported by our robotic automation platform (HighRes Biosolutions).

POA

Complex Cell Model Assays

iPSC-based assays, transwell assays (e.g. Lung cell 2D Air Liquid Interface model), primary cell assays, Cell Painting.

POA

Human Pluripotent Stem Cell Facility

Our facility helps researchers to integrate the use of hESCs and hiPSCs into their work. If you are an external client and would like to find out more about how we can support your research, please get in touch to discuss your project further. We look forward to collaborating with you and contributing to your research success.



Collaborative research projects

Design and execution of experiments

POA

Consulting services

Advice and expertise

POA

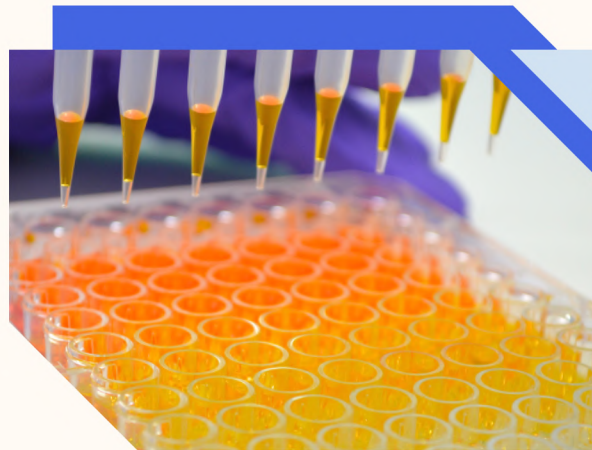


Human embryonic stem cells (hESCs) and human induced pluripotent stem cells (hiPSCs) have the ability to differentiate into every cell type in the human body. They provide a powerful tool for life scientists and medical researchers in diverse fields such as cell and developmental biology, drug discovery, and regenerative medicine.



Drug Discovery Unit

Widely recognised as the most developed and complete translational drug discovery engine working across multiple therapeutic areas in UK academia. We are a fully integrated unit which combines excellence in discovery science with small molecule drug discovery industry expertise.



Compound Management

Library Screening via Echo Acoustic Dispenser

- Customer provided library
- DDU library (3% Follow-up up to 5 μ L cherry pick volume)

From £115.20 p/plate

POA

Echo Plating

- Plate reformatting, cherry picking, potency curves, combination screening
- Controls added to customer supplied assay ready plate

From 30p p/well

Tecan Fluent Compound Transfers

- Latch rack or microplate cherry picking
- Latch rack tube / microplate solubilisation
- Library plate creation
- Reformatting of latch racks to microplates
- Direct copies latch rack or microplate

From 17p p/sample

From 8p p/sample

Project specific, POA

Project specific, POA

From £97.43 p/unit

Other services can be provided upon request

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Chemistry

Synthesis

Flow hydrogenation

£250/day plus cartridges as used

Electrochemistry

£250/day plus electrodes as used

Scale up (10l reaction), work up and purification

Project specific, POA

Purification

SFC purification (including chiral separation)

£250/day for development. Plus a per sample cost on preparative SFC: -From £250 achiral, £500 chiral

Mass directed /Teledyne ISCO ACCQ Prep purification

£35/hr plus £20 per sample

Analysis

HPLC Chiral method development

£35/hr

Polarimetry

£35/hr

LCMS Analysis

£35/hr plus £5 per sample

Other

Formlabs Form 3 3D Printer

£35/hr plus resin used

Bespoke cheminformatics coding projects

Project specific, POA

Computational Chemistry

Virtual Screening

1. Druggability Assessment
2. Ligand & Structure Based methods - fingerprint, pharmacophore, field-based, shape-based, docking & AI-based available

Project specific, POA

Machine Learning & AI Generative Design

1. DDU DMPK model prediction
2. Local ML model building
3. AI Based Generative Design
4. Scaffold Hopping

Project specific, POA

Fragment to Lead

1. Fragment growing
2. G Free Energy prediction

Project specific, POA

Other services can be provided upon request

POA

DMPK

Industry Standard in vitro assays

Including but not limited to:
Measured Physicochemical properties, Solubility, metabolic stability, permeability, protein binding, drug interaction risk, bioactivation risk and drug-transporter interactions.

Further information and full-service list provided on request

Project specific, POA

In vivo pharmacology

Including but not limited to:
Rodent PK, pgg interactions, surgical models, aid to rapid in vivo PoC

Further information and full-service list provided on request

Project specific, POA

Bioanalysis

Including but not limited to:
Quantification of compound and/or metabolites in biological fluids, Dose formulation analysis/stability, UPLCMSMS method development, metabolite identification.

Further information and full-service list provided on request

Project specific, POA

Biology

Protein engineering (molecular biology, construct design)

Protein scale up (E coli, SF9 or mammalian)

Protein QA (Nanotemper, Mass spectrometry)

Biophysics profiling (SPR, NMR)

Biophysics screening (including fragment compound sets)

Biochemical assay development (colorimetric, fluorimetric, RapidFire mass spectrometry)

Biochemical screening (including diversity compound sets)

Cell biology assay development (reporters, viability, High Content Imaging, phenotypic)

Cell biology screening (including diversity compound sets)

Cellular screening technologies for membrane proteins eg GPCR

Project specific, POA

***All services are conditional and subject to availability**



Life Sciences Innovation Hub

In Partnership With



Join us



- We can provide flexible chemistry and biology laboratory space configured to your company needs.
- We can provide access to array of technology platforms to support your science and help build your business.
- We can provide access to networks of investors and entrepreneurs. We would like you to be part of the Tay Cities Region health and life sciences cluster and welcome you to join us.

Spaces to grow your company



