



**QUEEN'S
UNIVERSITY
BELFAST**

SCHOOL OF
MEDICINE,
DENTISTRY AND
BIOMEDICAL
SCIENCES



**BE AT THE
FOREFRONT OF
CANCER DRUG
DISCOVERY**

MSc (Res)
ONCOLOGY DRUG DISCOVERY

Entrance Requirements

A minimum 2.1 Honours degree or equivalent qualification acceptable to the University in a relevant chemistry, biochemistry, pharmacology or medicinal chemistry. Evidence of equivalent professional qualifications (MBBS, BDS or BVSc) or experience will be considered on an individual basis. Intercalating students are encouraged. Students must have lab based organic chemistry, biochemistry or formulation experience.

International Qualifications

For information on international qualification equivalents please select Your Country from the list on our International Students website.

Additional Information for International Students

International students wishing to apply to Queen's University Belfast (and for whom English is not their first language), must be able to demonstrate their proficiency in English in order to benefit fully from their course of study or research. Non-EEA nationals must also satisfy UK Visas and Immigration (UKVI) immigration requirements for English language for visa purposes.

Evidence of an IELTS* score of 6.5, with not less than 6.0 in any component, or an equivalent qualification acceptable to the University is required.

*Taken within the last 2 years.

For more information on English Language requirements for EEA and non-EEA nationals see: qub.ac.uk/EnglishLanguageReqs

Fees and Funding

For fees and funding information please see the University's Graduate School website: <http://www.qub.ac.uk/sites/graduateschool/PostgraduateFunding>

Duration

1 year full time

Teaching Times

Class times vary throughout morning, afternoon and evening, and through a combination of course lectures, practical experiences and self-directed study to enhance employability. Students perform their research project throughout the programme, which may necessitate working (under supervision) at out-of-hours times, including weekends. On this course we do this by providing a range of learning experiences which enable our students to engage with subject experts, develop attributes and perspectives that will equip them for life and work that enhances their development as independent, lifelong learners.

Assessment

Assessment is by a combination of oral presentations, lab book writing and written assignments. The research project is also written up as a dissertation thesis.

Contact Us

askmhls@qub.ac.uk

Further Information

www.qub.ac.uk

MSc (Res) ONCOLOGY DRUG DISCOVERY

Overview

The Oncology Drug Discovery course takes academic and biotech research knowledge and applies it to the development of 21st-century health care.

There is an increasing need for graduates, both locally and Nationally, who can undertake lab based research, and translate it into improved knowledge and skill sets for research both inside and outside the academic community.

This research-intensive MSc will equip you with the rigorous research skills, and the innovation and the leadership skills to be at the forefront of meeting this global need.

This MSc is a multidisciplinary programme which will cover a variety of topics including; cancer target identification and validation; biological assay development; approaches for compound identification; drug optimisation strategies; cancer biomarker development and clinical trial development. You will be taught in the Centre for Cancer Research and Centre Biology at Queen's and given state of the art training in the drug development process working alongside course leaders who are research active academics or from local biotech backgrounds.

Content

Semester 1

Research Translational: from Concept to Commercialisation (Full Year)

This module covers the principles of disease biology and new technological developments that increase our understanding of disease processes. It develops an appreciation of the importance of innovation, business awareness and leadership skills in the translation of discovery science to clinical implementation.

Diagnosis and Treatment of Cancer

This module provides a comprehensive overview of the diagnosis and treatment of the common solid and haematological malignancies, including breast, ovarian, genitourinary and gastrointestinal cancers as well as the leukaemias.

Cancer Biology

This module provides a comprehensive overview of the fundamental principles of carcinogenesis, highlighting how normal control processes are bypassed during tumour formation. The pathogenic mechanisms to be discussed will range from genomic alterations in key gene families, to epigenetic mechanisms of gene control, alterations in kinase activities or protein turnover, or activation of aberrant phenotypes such as invasion and angiogenesis.

Target Identification and Development in Drug Discovery

This module describe how novel drug targets are identified and validated and identifies how biochemical assays are developed and employed in the drug discovery process. It also evaluates the alternative approaches used in the drug discovery to identify new chemical matter. It describes and defines chemical approaches used in developing 'hit' chemical compounds and identifies drug target classes and their drug-like pharmacophores.

Drug Optimization, Drug Delivery and Clinical Trials

This module evaluates the issues associated the drug development process and describes the development, validation and use of bio-markers in the drug discovery process. It discusses the practices employed in clinical trials and defines the processes employed in licensing of new chemical equity and the role it plays in the drug discovery process.

Research Project

You'll undertake a lab based project that is design to provide an insight into the early stages of the drug discovery process. The lab based projects will involve synthetic organic chemistry, biochemistry, cell biology and/or nanoparticle formulation studies.

Why Queen's

Research projects will be provided by both academic staff and local biotech companies in ground-breaking research areas with a strong focus on clinical applications.

The Oncology Drug Discovery course will be taught and mentored within the Centre for Cancer Research and Cell Biology: a purpose-built institute at the heart of the Health Sciences Campus, boasting state-of-the-art research facilities.

We have an international reputation in this area, achieved through; high-impact peer review publications; significant international research funding and the establishment of successful spin-out companies.

Careers

This programme offers an excellent opportunity to gain training in key skills required to find employment in the current pharma industry. It will also provide an excellent background for accessing further academic education.