

Overview

The National Institute for Cellular Biotechnology (NICB) conducts research aimed at the better diagnosis and treatment of cancer, diabetes and ocular diseases, and at the development of more efficient and affordable biopharmaceutical production processes.

The NICB aims to provide practical solutions to challenges facing the Biopharma industry and in translational medicine, based on its expert multi-disciplinary team and extensive clinical and industry network.

The NICB has active collaborations with an extensive range of academic, clinical and industrial partners and produces many scientific outputs in addition to its problem-solving activities.

Research Areas

The NICB has three main research themes:

- Upstream cell line innovation and development for the Biopharma industry
- Translational “bench to bedside” research to deliver solutions that directly benefit healthcare providers and patient care
- Development and characterisation of cell models for healthy and diseased tissues

The strategies utilised by the NICB in delivering on these research themes are based on understanding the individual challenges faced by our collaborative partners. In the case of our industry partners, this may involve seeking development of a more efficient process or the solution to a costly problem. For our clinical collaborators, this usually involves the analysis and modelling of a specific medical condition or patient outcome.

A desired outcome from that analysis is a prescribed course of action, often in the form of gene, protein or even pathway perturbation, followed by another round of analyses and assessment, which the NICB is uniquely placed to effect.



Why work with us?

The NICB offers state-of-the-art expertise/personnel, equipment and first-class laboratories capable of tackling a range of challenges in Cell biology, Molecular biology and Biological Chemistry.

The NICB provides access to the most extensive cell culture laboratory facilities in any educational institute in the country.

Additionally, the NICB offers an unrivalled cell bank, containing hundreds of different cell line models for multiple disease types and bioprocess phenotypes. This bank is a unique resource enabling study of multiple tissue types (breast, lung, brain, skin, etc.), various disease states (drug resistance, invasion, metastasis) and bioprocess outcomes (high/low cellular productivity, high/low growth, viability, etc.).

The NICB also has considerable expertise in cutting-edge profiling technologies

(e.g. miRNA, transcriptomics, proteomics profiling) as well as in the bioinformatics analysis of these results.

In addition, the NICB Chemistry Group can help with the development and application of targeted molecular libraries, along with hybrid materials for bio-applications, including:

- Generation of copper-artificial chemical nucleases as molecular scissors for gene editing
- Development of cytotoxic metallo-drug molecules as targets for nucleic acid synthesis.
- Development of responsive magnetic nanoparticles and inorganic/organic hybrid nanoparticles for diagnostic and therapeutic applications.
- Ferrocenyl peptide bioconjugates as anti-cancer agents

Centre Members



Dr. Niall Barron
Director
Biopharma & CHO Cell Engineering
Programme Leader Mammalian Cell Engineering



Dr. Paula Meleady
Associate Director
CHO Cell Proteomics;
Uveal Melanoma
Proteomics Core Facility



Dr. Donal O’Gorman
Diabetes & Metabolism
Head, 3U Diabetes Consortium



Dr. Norma O’Donovan
Breast Cancer,
Cutaneous Melanoma
Programme Leader:
Targeted Therapies for Cancer



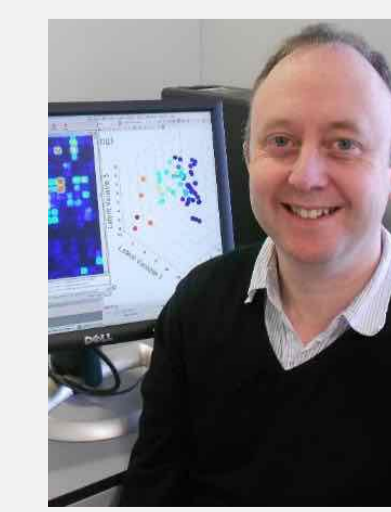
Mr. Michael Henry
Senior Technical Officer
Proteomics Core Facility
& Mass Spectrometry



Dr. Finbarr O’Sullivan
Associate Director
Tissue Engineering, Stem Cells, Cell Microscopy,
Cell Characterisation



Dr. Andrew Kellett
Synthetic Chemistry
Programme Leader
Medicinal Inorganic Chemistry



Dr. Padraig Doolan
Senior Research Fellow
Biopharma & CHO
Bioinformatics and Biostatistics