Knowledge, skills and experience matrix of the University of Aberdeen for IBioIC

The University of Aberdeen www.abdn.ac.uk

The University has an outstanding history of pioneering discoveries which have changed thinking and practice in medicine, science, arts and humanities over five centuries. The University supports and promotes research excellence in all its many forms. Areas of expertise relating to industrial biotechnology in the College of Life sciences and Medicine and the College of Physical Sciences are listed below.

Bio informatics [Contact IBioIC for Contact Details]

Consultancy, data analysis and training in bioinformatics are available through the University's Centre for Genome Enable Biology and Medicine. Additionally Prof Salt is a world leading expert in the plant ionomics field.

Industrial Wastewater [Contact IBioIC for Contact Details]

Particular expertise in analysing and devising wastewater treatment processes for industrial bio processes especially within the food and drink industry using experimental processes and mathematical modelling.

The Scottish Biologics Facility – bespoke antibodies for bioprocessing [Contact IBioIC for Contact Details]

Scotland's pre-eminent centre for generation of custom antibodies to a wide range of targets including proteins, peptides and haptens. Services offered include antibody and peptide library screening, immunised library construction and screening, antibody reformatting and protein expression. Training in antibody generation techniques is also available.

Eukaryotic protein synthesis [Contact IBioIC for Contact Details]

Using systems biology based approaches to model and analyse eukaryotic protein synthesis. Modelling and computational approaches allow bio-informatic analysis of sequence data, the generation of systems biology quantitative models of translation sub-systems and the building of multi-agent models of translation systems.

Marine bio discovery centre [Contact IBioIC for Contact Details]

The centre undertakes discovery and develop of compounds from the marine environment with novel biological applications. Core skills include the 2D and solution 3D structure determination of organic molecules and the understanding and studying of biological phenomena. Tools available are separation techniques (LC GC), Spectroscopic techniques (1D and 2D NMR, MS, IR, UV-Vis, CD, ICP-MS), theoretical methods (DFT), synthetic methods and molecular biological methods.

Environmental pollutant analysis [Contact IBioIC for Contact Details]

Analysis of the fate of organic and inorganic pollutants, development of bioassays to assess environmental toxicity, application of chemical and biological techniques for soil remediation.

Systems Biology - Mathematical modelling of biological processes [Contact IBioIC for Contact Details]

Mathematical modelling of biological systems and molecular biology processes using theories of dynamical systems and statistical physics.

Algal Biology [Contact IBioIC for Contact Details]

Culturing and analysis of algae using microbiological, biochemical, physical and molecular techniques

Catalysis [Contact IBioIC for Contact Details]

Surface and catalytic chemistry, enantioselective reactions, spectroscopic tools including vibrational (FTIR and Raman), ESR, NMR, Impedance and X- ray absorption.

Microbial metabolism [Contact IBioIC for Contact Details]

Research into microbial organisms and processes in ruminant animals to improve food production, improve animal welfare and reduce greenhouse gas emissions.