

Proteomics

The term *proteomics* was coined in 1994 by Marc Wilkins who defined it as "*the study of proteins, how they're modified, when and where they're expressed, how they're involved in metabolic pathways and how they interact with one another.*" The analysis of proteins is a critical requirement for our understanding of biological function. Proteins are not only the building blocks of the body but are also key components of metabolic pathways and targets for drug action. Due to the diversity of proteins and multiple forms (e.g. by post-translational modification), the study of the proteome: the total complement of expressed proteins in a cell or organism, is extremely complex.

Unlike the field of genomics, which has been widely served by high-throughput platforms such as parallel sequencing, the field of proteomics continues to require multiple and diverse technological approaches e.g. protein arrays, immunoassay, immunoblotting, mass spectrometry. The rapidly developing field of proteomics underpins Life Science research, pharmaceutical and biotechnology analysis as well as *in vitro* clinical diagnostics. The global market size for proteomics is approximately \$4B and the extensive range of marketed products includes specialist consumables, instruments, software, integrated systems and services.

Ithaka Life Sciences Ltd. is well-placed to offer advice and support for development and commercialization of proteomics products and technologies. Our team has experience in technology evaluation, market assessment and practical implementation, covering the research, pharmaceutical and clinical diagnostic market segments. We have worked with clients in the private and public sector to support and enhance their proteomics strategies. Team members with direct experience include Richard Cumming, Paul Rodgers and Malcolm Rhodes.

Paul Rodgers, Ithaka's Managing Director, worked with the scientific founders at Cambridge University to establish Psynova Neurotech Ltd., which is developing novel biomarkers for neuropsychiatric disorders. The company is based on groundbreaking research led by Dr Sabine Bahn that utilizes a sophisticated mass spectrometry-based strategy for the identification of low abundance proteins in human tissue samples. Paul is a director of the company, in which capacity he led a £1.5M seed funding round and played a leading role in securing a landmark deal with Rules Based Medicine Inc that is providing Psynova with funding and a route to market for its first product, a biomarker panel for diagnosis of first onset schizophrenia.

Richard Cumming has over twenty years experience in proteomics product development, product management and marketing within Amersham International, Amersham-Pharmacia Biotech and General Electric (GE) Healthcare. In addition to his work with Ithaka, he is part-time marketing director of a company exploiting protein biomarker technologies for diagnostics.

Malcolm Rhodes has over thirty years experience in bioprocess development, product development and operations including the development of polyclonal and monoclonal antibody reagents and test methods for blood grouping, and infectious disease immunoassays and at Bioscot/Serologicals (now Millipore).