Biopta is a contract research organisation specialising in the use of human tissues for the prediction of drug efficacy and safety during non-clinical drug development. A spin-out company from Glasgow Caledonian University (GCU), Biopta was set up by Dr David Bunton in 2002 with the intent of developing services and technology which could reduce the 90% failure rate of drugs in clinical trials.

The company has won numerous awards for innovation for its patented technology, including a Scottish Enterprise Proof of Concept Award, a regional John Logie Baird Award and a Scottish Executive SMART Award.

Historically, relatively little human tissue-based research has been conducted using fresh human tissues because of the difficulties in sourcing and working with such tissues. However, the pharmaceutical industry has recognised that the differences between species and poorly predictive in vitro methods have contributed to a high failure rate of new drugs. Biopta’s aim is to make fresh, functional human tissue assays a routine part of the drug discovery process; in 2005 Biopta became the first company testing fresh human tissues to become members of the Good Laboratory Practice programme.

Scotland’s First Minister Alex Salmond has congratulated Biopta on being an example of Scotland’s great innovation traditions, adding that the company counts the leading pharmaceutical companies in the world among its clients.

Biopta now has a growing US facility where we conduct a range of translational human assays on tissues from heart, lungs, bladder and GI tissues. Biopta has conducted drug development projects for clients in areas as diverse as asthma, diabetes, hypertension, cancer and migraine. To maintain its growth Biopta aims to
stay at the forefront of human tissue research and has created a dedicated internal R&D team, which is creating new assays in inflammation, absorption and cardiac safety.

If a client has specific requirements utilising a particular tissue within a target therapeutic area, Biopta can create and validate a bespoke assay to meet their needs. Human pharmacology studies bridge the gap between animal in vivo data and the clinic and offer invaluable human data much earlier in the drug development process, helping to reduce the risk of late stage failures.

Biopta’s core expertise is utilising fresh isolated ex vivo human tissues and measuring a functional response such as an unwanted constriction or dilation. Biopta’s human tissue assays, with full GLP compliance, provide invaluable pre-clinical supporting data in humans. Biopta can also provide a fully outsourced human tissue research service to its clients; branded as TissueConnections™, this service offers Biopta’s expertise in the sourcing, provision and use of human tissues to its clients in the pharmaceutical industry. By procuring human tissues for its clients and dealing with all aspects of such research projects including material transfer agreements, legal compliance and project management Biopta is able to offer a truly integrated solution to companies wishing to access the benefits of human tissue research.

Biopta has recently developed a number of novel assays including investigations into inflammatory processes using healthy and inflamed human tissues. Tissues available include the full human gastrointestinal tract, skin, lung and blood vessels. Inflammation affects many tissues and is increasingly being revealed as a causative factor in a number of chronic diseases. Biopta is able to predict drug effects such as inflammatory activity or drug absorption in the stomach, small intestine or large intestine, providing valuable information on safety or efficacy.

Current in vitro methods for the prediction of gut permeability are often unsatisfactory as they are inaccurate when used to predict the absorption of compounds that are actively absorbed by the gut or compounds that are poorly absorbed.

Biopta also has expertise in the study of both cardiac and vascular tissues. Human cardiovascular tissues can be used to determine the efficacy of treatments for heart failure, angina or hypertension, but are most commonly used to detect adverse effects.

Dr David Bunton, co-founder and CEO of Biopta, is an expert in vascular pharmacology who, after graduating from the University of Glasgow, undertook a Research Assistant position sponsored by the charity Chest, Heart and Stroke, Scotland. The success of this period of research resulted in David taking up a PhD at Glasgow Caledonian University and a Lectureship in Physiology and Pharmacology. David was also a consultant to the Diabetes Education and Training Unit at Glasgow Caledonian. David has numerous publications in respiratory and vascular pharmacology including recently published reviews on the use of human tissues in drug discovery (Drug Discovery Today, May 2009; ATLA, 2009). He is also a member of the British Pharmacological Society and Safety Pharmacology Society.

FURTHER INFORMATION:
Dr David Bunton
Biopta Ltd
info@biophta.com 0141 330 3831

At Glasgow Caledonian University, we work with industry and public sector partners to ensure our expertise responds to the need for real-world innovation. GCU’s strategic business development and knowledge transfer teams work with academic experts in our Schools and Research Institutes to support businesses with a problem-solving approach.

Contact us to find out more about building a brighter future with GCU at www.gcu.ac.uk/business.

William Campbell
william.campbell@gcu.ac.uk 0141 331 3267
School of Health and Life Sciences
Glasgow Caledonian University
www.gcu.ac.uk/hls