

# bio-dundee update

www.biodundee.co.uk

Life Sciences News from Scotland's City of Discovery

December 2010

## Dundee welcomes new company Ubiquigent Ltd: a biotech/academic partnership



A recent partnership between the US biotech company Stemgent, and the Scottish Institute of CeLL Signalling (SCILLS) at the University of Dundee, has resulted in the creation of the new Dundee based company Ubiquigent Ltd. Based within the College of Life Sciences this exciting new company will lead the way in bringing products and services to market to support academic and pharmaceutical research on the ubiquitin proteasome system, a key cell signalling pathway in drug discovery research, and the major focus of SCILLS.

Reversible protein modification constitutes a key process mediating intracellular signalling through the endowment of a protein with a different function or destiny. Phosphorylation is perhaps the best known of these modifications and its relevance to disease has been a focus of the Medical Research Council's (MRC) Protein Phosphorylation Unit (PPU) at the University of Dundee. The clinical utility of targeting this system has been proven in the pharmaceutical industry across many therapeutic areas.

In recent years Sir Philip Cohen, Director of the PPU and SCILLS - along with colleagues within the University of Dundee - has been investigating another key protein modification process called ubiquitylation and in particular how this interfaces with protein phosphorylation. It is now believed that Ubiquitin-mediated signalling pathways are of equal importance in cellular regulation and homeostasis as phosphorylation. With reference to the future drug discovery potential of the ubiquitin system Sir Philip comments;

*'Over the past 12 years 16 drugs have been developed for the treatment of cancer that target particular kinases - the enzymes that attach phosphate to proteins - with current sales of US\$15 billion per annum. Over 150 others are undergoing clinical*

*trials in many therapeutic areas. Currently only one drug that targets the ubiquitin proteasome system (Bortezomib) has been approved for clinical use with current sales of US\$1.4 billion per annum and only 13 others are undergoing clinical trials. In view of the surge of interest in the ubiquitin system it seems inevitable that drug discovery programmes in this area will increase considerably in the years to come.'*

In the late 1990s the biotech entrepreneur Ian Ratcliffe and the MRC PPU at Dundee entered into an arrangement to establish Upstate Biotechnology in Dundee. This venture was very successful leading to the acquisition of Upstate by Serologicals Corp in 2004. After discussing with Sir Philip the likely future importance of ubiquitylation to both academic and pharmaceutical research Ian decided to embark on a second collaboration by setting up a new biotech company in Dundee. Thus was born Ubiquigent Ltd in 2009 ([www.ubiquigent.com](http://www.ubiquigent.com)); a biotech start-up co-founded by the University of Dundee, the Medical Research Council and Stemgent ([www.stemgent.com](http://www.stemgent.com)), a Boston and San Diego based US biotech of which Ian Ratcliffe is the CEO. Ubiquigent has recruited four staff who previously worked at other biotech companies in Dundee.

Located adjacent to the SCILLS Protein Ubiquitylation Unit (PUU), Ubiquigent commercialises ubiquitin signalling pathway research products and kits, and provides related services to the pharmaceutical and biotechnology industries. Ubiquigent's close collaboration with SCILLS means that the company is already offering the greatest diversity of products across one key area of the ubiquitin pathway and has many products and kits in development to help drive research in the field. Turning to services, the company is already engaged in collaborations with the pharmaceutical industry to enable and support their drug discovery efforts in this field.

Contact: Dr Jason Brown, General Manager,  
Ubiquigent Ltd, The Sir James Black Centre,  
University of Dundee,  
Dundee, Scotland, DD1 5EH, UK  
Tel: +44 (0)1382 388292  
Email: [jason.brown@ubiquigent.com](mailto:jason.brown@ubiquigent.com)  
Website: [www.ubiquigent.com](http://www.ubiquigent.com)



## Research suggests ME caused by virus

Scientists at the University of Dundee have recently found further evidence to suggest ME is caused by a virus. University of Dundee scientists investigating Chronic Fatigue Syndrome/Myalgic Encephalomyelitis (CFS/ME) in children have found abnormalities in blood cells involved in inflammation. Indicative of a possible viral infection, these abnormalities are similar to those previously identified in adults with the same condition. The study, carried out at the University of Dundee, Scotland, took blood samples from 50 youngsters aged between seven and 14 years, half of whom had ME. The Results showed that the blood of those with the illness contained higher proportions of free radicals – harmful molecules that damage cells, tissues and organs. Dr Gwen Kennedy, at the University of Dundee, who led the team said: “These results are of great importance; not only do they show an underlying, detectable defect in the behaviour of the children’s immune cells, they also confirm our previous findings in adults.”

Contact: Roddy Isles,  
Head of Press,  
University of Dundee,  
Nethergate,  
Dundee, Scotland, DD1 4HN, UK  
Tel: (0)1382 384910  
Fax: +44 (0) 1382 385515  
Email: [www.dundee.ac.uk](http://www.dundee.ac.uk)



## TFT launches a new AV Access Graft

Medical device company, Tayside Flow Technologies Limited (TFT) has recently announced the arrival of its new product, the Spiral Laminar Flow™ Arterio-venous Graft (SLF™ AV Graft). Designed to meet the growing challenges and demand for a substantial, cost effective and better performing hemodialysis access device, the SLF™ AV Graft incorporates TFT patented Spiral Laminar Flow technology (SLT™), which acts to restore natural blood flow patterns within the device.

The SLF™ AV Graft is supported by several website based tools, including the Vital Information Card, which advises the user of the proper handling of the graft, and also a series of Technical Sheets that detail several aspects of care and interventions to the graft that include cannulation and revision techniques.

The new Spiral Flow™ AV Graft is available in a single 0.6cm x 45cm configuration and features the patented Spiral Flow Inducer and unique Inducer Indicator Ring to aid in the proper cannulation and servicing of the graft. TFT has now sold over 1000 grafts since 2009 with the rate of implants increasing, as TFT continues to grow its markets with new distributors in the US and across Europe.

Contact: David Lawrence, CEO,  
Tayside Flow Technologies Limited,  
Unit 22, Prospect Business Centre,  
Gemini Crescent,  
Dundee Technology Park,  
Dundee, Scotland, DD2 1TY, UK.  
Tel: +44 (0) 1382 598532  
Fax: +44 (0) 1382 598528  
Email: [david.lawrence@tayflow.com](mailto:david.lawrence@tayflow.com)  
Website: [www.tayflow.com](http://www.tayflow.com)



## Cyclacel Pharmaceuticals agreement with FDA for pivotal Phase 3 trial of sapacitabine

Cyclacel Pharmaceuticals, Inc. (NASDAQ: CYCC, NASDAQ: CYCCP) announced that it has reached an agreement with the FDA regarding a Special Protocol Assessment (SPA) on the design of a pivotal Phase 3 trial for sapacitabine oral capsules. The drug will be assessed as a front-line treatment in elderly patients aged 70 years or older with newly diagnosed acute myeloid leukemia (AML) who are not candidates for intensive induction chemotherapy. The SPA agreement with FDA represents an important milestone for Cyclacel and provides a clear registration pathway for sapacitabine. If it reaches the market, sapacitabine would be the first orally-administered drug to be offered to this patient population with the potential to serve as induction, consolidation and maintenance treatment of this life-threatening disease. The Phase 3 trial of sapacitabine to be conducted under the SPA will be a randomized study against an active control drug with the primary objective of demonstrating an improvement in overall survival. Sapacitabine will be administered as an outpatient treatment. Cyclacel plans to begin patient enrolment before the end of 2010.

Cyclacel Pharmaceuticals, Inc. is a biopharmaceutical company developing oral therapies that target the various phases of cell cycle control for the treatment of cancer and other serious diseases. Three product candidates are in clinical development: Sapacitabine completed Phase 2 studies for the treatment of acute myeloid leukemia in the elderly and is in Phase 2 for myelodysplastic syndromes and lung cancer. Seliciclib a CDK inhibitor, is in Phase 2 studies for the treatment of lung cancer and nasopharyngeal cancer and in a Phase 1 trial in combination with sapacitabine. CYC116, an Aurora kinase and VEGFR2 inhibitor, is in a Phase 1 trial in patients with solid tumours.

Contact: Dr Susan Davis, Director, Business Development, Cyclacel, 1 Lindsay Place, Dundee, DD1 5JJ.  
Tel: +44 (0) 01382 206062  
Fax: +44 (0) 1382 207508  
Email: [sdavis@cyclacel.com](mailto:sdavis@cyclacel.com)  
Website: [www.cyclacel.com](http://www.cyclacel.com)



## Cancer Research UK launches first Scottish Centre in Dundee



DUNDEE CANCER CENTRE

Dundee's Ninewells Hospital was recently awarded cancer centre status by Cancer Research UK and opened the first such cancer centre in Scotland. The Dundee Cancer Centre will help set the pace for national and international progress in bowel, breast and skin cancer. It will build on Dundee's world class research in life sciences, radiotherapy, surgery and new highly advanced image-guided surgical techniques.

The Centre will also lead to the development of an international hub for research into melanoma, the most serious type of skin cancer, making new discoveries in basic cell biology that will eventually lead to new treatments for patients. Collaboration will be the key to the success of the Centre, which brings together researchers and support from University of Dundee, Cancer Research UK and the NHS Tayside.

The Centre will be directed by Irene Leigh with support from a diverse team of world class researchers in the field of cancer biology and clinical oncology, including Professor Inke N  thke, a leading researcher in cancer cell biology, Professor Kevin Hiom, a world expert in DNA damage repair, Professor Alastair Thompson, leading specialist in breast cancer, Dr Dougal Adamson, consultant clinical oncologist and Alison Harrow a specialist cancer research nurse, all at the University of Dundee, and Dr Emma Hill who will manage the centre. A key role of the new cancer centre is to build on its excellent relationship with local community and interest groups to further improve communication about cancer research and treatment.

Contact: Sarah Muir, Local Engagement and Development Manager, Cancer Research UK, Medical Sciences Institute, University of Dundee, Dow Street, Dundee, Scotland, DD1 5EH, UK  
Tel: +44 (0)1382 386827 Email: Sarah.Muir@cancer.org.uk  
Website: www.dundee.ac.uk/centres/cancer/



## Dundee Scientist in Top 100 UK List

Dundee scientist, Sir Philip Cohen, from the University of Dundee, has been named among the '100 most important people in British science' by The Times newspaper. Sir Philip is placed at no. 55 in the list, ahead of figures like Ian King, the CEO of British Aerospace (59), Lord Browne, the former CEO of BP (68), and Lord Sainsbury, the former Minister of Science and head of Sainsbury's super-market chain (78).

Contact: Roddy Isles, Head of Press, University of Dundee, Nethergate, Dundee, Scotland DD1 4HN, UK  
Tel: (0)1382 384910  
Fax: +44 (0) 1382 385515  
Email: r.isles@dundee.ac.uk  
Website: www.dundee.ac.uk



## Axis-Shield files a new patent for Enhanced and Improved detection of Vitamin D

Axis-Shield plc (LSE:ASD, OSE:ASD), the international and innovative in vitro diagnostics company, has announced it has filed a patent application covering a novel technology for simplified and more efficient testing for vitamin D. The new test under development is potentially applicable to a wide range of instruments currently used in the clinical laboratory. Existing methods of testing are complicated and require complex separation technology and denaturing solvents, making the tests difficult to operate on common clinical testing instruments. The new approach covered in the filed application addresses the need for easier and more precise methodology and utilises custom-engineered antibodies to identify specific and relevant vitamin D when complexed with a carrier protein.

It is now recognized that more than 50% of the world's population is at risk of vitamin D deficiency. Vitamin D deficiency is involved in many bone diseases and has also been associated with other serious consequences including increased risk of common cancers, autoimmune diseases, infectious diseases and cardiovascular disease. This renewed appreciation of the importance

of this vitamin has led to an intense increase in demand for accurate methods of identifying deficiency and the recognition of the need for supplementation in many situations. Many clinical laboratories have reported yearly increases of more than 50% in physician-requested vitamin D tests and in some instances in France and the USA an increase in vitamin D testing as high as 80 to 90% has been noted.



Contact: George Zajicek, Business Development Director, Axis-Shield plc, Luna Place, Technology Park, Dundee, Scotland, DD2 1XA, UK  
Tel: +44 (0) 1382 422 000 Fax: +44 (0)1382 422 088  
Email: george.zajicek@axis-shield.com  
Website: www.axis-shield.com

## Cellartis now partner in a €10 million R&D project

Cellartis AB, a premier provider of stem cell derived products and technologies has announced that the company will be a key partner in a five year joint research and development project which is now entering negotiations to receive funding within the Health Programme of the European Commission's 7th RTD Framework Programme. The project, "ScreenTox", will address the unmet need for test methods for predicting toxicity of drugs, chemicals, and cosmetic ingredients. Cellartis is one of 14 industrial and academic partners in the project which is co-ordinated by Inserm, the French National Institute for Health and Medical Research. Following successful negotiations, the ScreenTox-project will be funded as part of a research cluster comprising seven consortia with an overall budget of 50 million Euro, through a unique initiative of the European Commission and the European Cosmetics Association (COLIPA).

In the development of products for human use it is vital to identify compounds with toxic properties at an early stage of their development, in order to avoid spending time and resources on unsuitable and potentially unsafe candidates. Human pluripotent stem cells offer an unparalleled opportunity to create a wide variety of human cell-based test systems since these cells may be expanded indefinitely and triggered to differentiate into any cell type. The ScreenTox-project aims to make use of these two attributes in order to optimise current processes and develop novel methods to achieve functional differentiation of human-based target cells in vitro. Cellartis role will be to produce and further develop human embryonic and induced pluripotent stem cell derived cardiomyocytes and hepatocytes. Cellartis is looking into the possibilities of allocating some project efforts to its Dundee site.

Contact: Dr Johan Hyllner, Chief Scientific Officer, Cellartis, Maclagan House, 1 Würzburg Court, Medipark, Dundee, Scotland, DD2 1FB, UK  
Tel: +44 (0) 01382 569970  
Email: johan.hyllner@cellartis.com  
Website: www.cellartis.com



Please reference the BioDundee Update if contacting any of the organisations featured in this publication.

## Drug Development Opportunities

The Drug Discovery Unit (DDU) in the College of Life Sciences, University of Dundee has been established with the aim of translating basic science into lead compounds to validate putative drug targets, to use as tools to investigate disease pathways and, when appropriate, advance to pre-clinical drug candidates. The DDU has two major areas of focus:

- neglected tropical diseases
- innovative targets and pathways

The DDU has all of the capabilities required for early phase drug discovery: assay development, high throughput screening, cell biology, medicinal chemistry, structural biology, computational chemistry and DMPK. A number of projects in therapeutic areas that include neglected diseases, cancer, cardio-metabolic, neuroscience, anti-microbials and genetic diseases are at various stages of development from hit discovery to hit validation and lead development. The University is seeking commercial partners to engage in the translation of outputs from DDU.

Contact: Rob Ford, Business Development Manager (Strategic and Corporate Partnerships), Research and Innovation Services, University of Dundee, 11 Perth Road, Dundee, Scotland, DD1 4HN, UK

Tel: +44 (0)1382 384664  
Email: r.p.ford@dundee.ac.uk  
Website: www.dundee.ac.uk/research

## Contact BioDundee:

If you would like more information on the companies or articles featured in this newsletter please feel free to contact BioDundee.

We can also provide you with further information on local organisations, help you make contact with potential partners, or facilitate and co-ordinate visits to this bioregion. Contact us in any of the following ways;

Contact: Dr Allison Beattie, BioDundee Co-ordinator  
Mail: BioDundee, 3 City Square, Dundee, Scotland, DD1 3BA, UK.  
Tel: +44 (0) 1382 434913  
Fax: +44 (0) 1382 434650  
Email: info@biodundee.co.uk  
Website: www.biodundee.co.uk



EUROPE & SCOTLAND  
European Regional Development Fund  
Investing in your Future

