

Knowledge Transfer Partnerships

KTP BENEFITS

Knowledge Transfer Partnerships are designed to benefit everyone involved

-  Businesses will acquire new knowledge and expertise
-  KTP Associates will gain business-based experience and personal development opportunities
-  University, college or research organisation will bring their experience to enhance the business relevance of their research and teaching

A DTI Business Support Solution
<http://www.dti.gov.uk/ktp/>

CYCLACEL LTD KTP BRINGS CYCLACEL CANCER BREAKTHROUGH CLOSER

ABOUT THIS CASE STUDY






CYCLACEL LTD IS A DUNDEE-BASED BIO-PHARMACEUTICAL COMPANY FOUNDED PRIMARILY TO EXPLOIT RESEARCH UNDERTAKEN AT THE UNIVERSITY OF DUNDEE. THE AIM OF THIS KNOWLEDGE TRANSFER PARTNERSHIP (KTP) WITH THE UNIVERSITY OF EDINBURGH WAS TO DEVELOP A NEW ANTI-CANCER COMPOUND WITHIN A REDUCED TIMEFRAME, THROUGH THE INTRODUCTION OF ADVANCED NUCLEAR MAGNETIC RESONANCE (NMR) TECHNIQUES.

ABOUT THE SPONSORS

THE DEPARTMENT FOR TRADE AND INDUSTRY (DTI) DRIVES THE AMBITION OF 'PROSPERITY FOR ALL' BY WORKING TO CREATE THE BEST ENVIRONMENT FOR BUSINESS SUCCESS IN THE UK. THE DTI AID INDIVIDUALS AND COMPANIES IN IMPROVING PRODUCTIVITY BY ENCOURAGING ENTERPRISE, INNOVATION AND CREATIVITY.

THE BIOTECHNOLOGY AND BIOLOGICAL SCIENCES RESEARCH COUNCIL (BBSRC) FUNDS BASIC AND STRATEGIC BIOLOGICAL RESEARCH AND TRAINING IN UNIVERSITIES AND RESEARCH CENTRES, AND PROMOTES KNOWLEDGE TRANSFER FROM RESEARCH TO APPLICATIONS IN BUSINESS, INDUSTRY AND POLICY.

FAST FACTS

-  New understanding of the structure of the uncomplexed form of the protein MDM2
-  A major step forward in the development of rational drug discovery
-  Worldwide interest in scientific paper
-  The potential to exploit new intellectual property
-  Cyclacel enjoyed access to a wealth of relevant knowledge and expertise

The Company



"The KTP project has been very beneficial and positive. It gave us access to the required knowledge and expertise and, after completion, it had met all of our major objectives."

Campbell McInnes, Head of Structure-Based Design at Cyclacel

As a world leader in the search for new and better treatments for cancer, Cyclacel has been successful in raising tens of millions of pounds from investors. It employs around 60 people in Dundee and Cambridge and expects to increase its workforce by up to a third.

ABOUT THE PROJECT

Before the KTP project was initiated, Cyclacel already had a close working relationship with the University of Edinburgh's Department of Chemistry, which was in effect providing its structural biology arm through a major collaboration.

BENEFITS

Throughout the project, Cyclacel enjoyed close collaboration with the experts in the academic team and had access to one of the very few top-of-the-range NMR instruments in the UK.

Campbell McInnes, of Cyclacel, believes that the company now has the prospect to develop the results of the project for commercial use, especially following the publication of a major academic paper.

Cyclacel has embarked on a second KTP project which aims to introduce leading edge, organic synthetic chemistry

approaches and techniques to the drug development process and different ways of approaching the discovery of new drugs.

RESULTS

- Specific and valuable knowledge of how the protein adapts its structure to grip onto the drug
- An insight into the structure of the 'uncomplexed' form of the protein MDM2
- Ability to transform results into commercial use
- A second KTP project has been established

The Associate

The KTP Associate chosen for the project was Slovakian-born Dr Stanislava Uhrinova.

By the end of the two-year programme, Dr Uhrinova and her colleagues, both in the Department of Chemistry and at Cyclacel, had succeeded in determining the structure of the 'uncomplexed' form of a protein called MDM2. This could be key to the development of small molecule therapies for several very common forms of cancer.

BENEFITS

During the programme, Dr Uhrinova had the support of a team at the University of Edinburgh, which included Dusan Uhrin, an expert in the use of the complex NMR instrument and widely considered a 'guru' in this type of experiments, where specific pulses need to be delivered to get results.

Dr Stanka Uhrinova has collaborated in numerous academic papers, with the one resulting from this project likely to be the most significant so far. Since the completion of the KTP, she has returned to Edinburgh University as a full-time research scientist.

RESULTS

- Major academic paper published to worldwide interest
- Collaboration with experts in NMR
- Entry into new area of research and techniques
- Gained an NVQ Level 4 in Management

The Academic Partner

"I found the experience very educational. It has added a new dimension to the work of an academic. The idea of academics and businesses working together has got to be the way forward."



Professor Paul Barlow, Department of Chemistry, University of Edinburgh

Until now, all the structural information available about the protein in question has been based on what it looks like when it is already bound to another compound. The University's contribution was to see, for the first time, what the protein looks like in the absence of any binding partners, which is critical information for those in the business of drug design.

BENEFITS

The project has added significantly to existing knowledge of how a compound - in this case, a cancer drug - binds to a protein.

The work took the Department of Chemistry into an entirely new area of research and built a sufficient platform on which to carry on the research in a purely academic sense.

RESULTS

- The discovery of critical information about a cancer drug
- Potential worldwide interest in the research
- Experience of working together with a business
- Ability to carry on research for academic purposes