CASE STUDY

FACTFILE

> Invented by: Professor Ian Kimber and Dr Rebecca Dearman, Faculty of Life Sciences
> Application: Therapeutics
> Licensed to: Brickell Biotech, Inc. in 2011
> IP: Patents, know-how
> Funded by UMIP Proof-of-Principle Funding (PoP)

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Professor Ian Kimber
ABOUT THIOREDOXIN PEPTIDE

Thioredoxin is a redox active protein that has a number of important biological functions. A short peptide derived from this protein has been shown to have anti-inflammatory properties in the skin. It is this peptide (BBI-2111) that is being developed in association with Brickell Biotech Inc as a novel topical treatment for inflammatory skin diseases, including psoriasis. The peptide was initially identified and characterised at Syngenta Biopharma by Ian Kimber and Rebecca Dearman, who joined The University of Manchester in 2007.

Speaking about the licensing deal, Andrew Sklawer, Vice President, Operations at Brickell Biotech, Inc. commented: “We are very excited about this deal and are looking forward to progressing the development of BBI-2111 as a novel therapy for inflammatory skin conditions with high unmet clinical needs. We were keen to work with the University as we recognised the specific scientific expertise and exceptional laboratory facilities that it could offer.”

We met up with inventor, Professor Ian Kimber, to find out more about his experiences of the licensing process...

Was the application of the invention apparent from the outset? If not, how was this developed?

Within Syngenta Biopharma we had a number of interests in thioredoxin as a potential basis for therapeutic proteins or peptides. However, our key discovery was that thioredoxin displayed biological properties in the skin consistent with anti-inflammatory activity. From there we began to characterise the mechanistic bases for these properties, and in parallel we were able to identify a nine amino acid peptide within the parent protein that showed exactly the same activity.

How important was the funding?

The initial developmental work was supported by Syngenta Biopharma, but since we and the project have moved to The University of Manchester we have had very substantial support from UMIP. In particular we have benefited from the expertise of Drs Sunita Jones and Rich Ferrie at UMIP, and have also been awarded UMIP Proof-of-Principle funding that has facilitated further work on the characterisation of thioredoxin peptide within the University of Manchester.

How do you feel you have benefited from licensing this technology out?

Our collaboration with Brickell Biotech Inc has been a very fruitful and productive partnership. It brings together our own skills in skin biology, cytokines and inflammation with the know-how of Brickell in the development of novel therapeutics.

How did you manage to juggle this with your other activities?

Sometimes with difficulty! We have a large and busy group with a variety of programmes of work and (currently) 7 PhD students, so combining our basic research with the development of thioredoxin peptide alongside other activities and responsibilities is not always easy. But the rewards are significant. Developing novel therapeutics brings a whole new set of interesting scientific and technical challenges that open up new horizons and enrich the scientific landscape of the laboratory.

What did you especially value from the University during this process?

UMIP have been tremendously supportive in providing guidance and in securing our productive partnership with Brickell Biotech. Moreover, the Faculty of Life Sciences, and the University of Manchester, are very keen to provide a environment that encourages exploitation and commercialisation of
research and entrepreneurial achievement. Finally, we have benefited enormously from a close and long-standing collaboration with Professor Chris Griffiths in the Faculty of Medical and Human Sciences at the University who brings to the project considerable expertise and experience in chronic inflammatory skin disease.

What were your aspirations for getting involved in the commercialisation process?

It is still very early days of course. However, the really exciting prospect is that what started out as exploratory research in the laboratory investigating skin inflammation might possibly translate into a novel therapeutic for treatment of psoriasis and possibly other skin diseases and that delivers real patient benefits. If it makes millions then so much the better, but that isn’t the primary goal.

What does the future hold for thioredoxin peptide?

The future looks promising. The partnership with Brickell Biotech is going very well, and we have recently had some very encouraging confirmatory results from pre-clinical efficacy studies conducted in the US. The plan now is to progress as quickly as possible to clinical trials addressing along the way issues relating to safety, dosimetry, formulation and manufacture. Although nothing is certain we now see no major hurdles on our route to clinical trials.
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Professor Ian Kimber