

# Canterbury Scientific poised for growth

## Fostering science excellence in NZ

With escalating export sales and pioneering biomedical innovations both in production and in the pipeline there's an exciting future ahead for Canterbury Scientific.

This successful biotech firm first emerged out of the Canterbury District Health Board (CDHB) back in 1985. Yet few had heard of Canterbury Scientific until February 18 when they opened their new research and development facility in Addington, Christchurch.

For 25 years the founding Kiwi directors - Professor Robin Carrell, Bryce Hawkins, and Dr Maurice Owen - and their team have been researching and developing advanced haemoglobin (the red pigment of blood) controls that have become groundbreaking in their application.

To help diabetics manage their diabetes, Canterbury Scientific developed some of the highest quality haemoglobin controls used for monitoring blood tests around the world. Their top seller, the haemoglobin A1c control, is today relied on by two out of every five diabetics in the United States, and one in every 10 diabetics in Europe to help keep them in check. And with diabetes expected to rise to "epidemic" proportions, the growth in sales of their products is unlikely to slow anytime soon.

Canterbury Scientific chief executive Dr Neil Pattinson says, "It all started when Prof Carrell, who is also a leading haematologist and fellow at Cambridge's Trinity College in the UK, was working on the stabilisation of haemoglobin and the preparation of a haemoglobin A2 standard. Haemoglobin readily deteriorates on exposure - even within a matter of hours at room temperature. Together with Dr Owen, who at the time worked with Prof Carrell at the CDHB, they pioneered a reliable and stable haemoglobin A1c control (HbA1c) using technology that allows blood samples to be stored and used under ordinary lab



**Exciting future:** Canterbury Scientific directors in front of their new facility in Addington. From left: Edward Carrell, Colin Averill, Maurice Owen, Robin Carrell, Bryce Hawkins and John Barr.

conditions for months on end."

Dr Owen says, "There was very much a Kiwi 'can do' attitude about making the HbA1c controls. We started looking at the commercial opportunities within the science areas we were researching and it occurred to us that developing an HbA1c control could be a natural extension to the haemoglobin A2 controls. Developing the idea proved a very successful exercise, and has resulted in a control that is now helping hundreds of thousands of diabetics around the world."

It was this pioneering research that led to the formation of Canterbury Scientific and the manufacture, commercialisation and export of their freeze-dried and ready-to-use liquid controls for haematology and biochemistry

diagnostic laboratory tests.

"The company is the only one in the world that makes HbA1c controls in a test tube by in vitro glycation instead of using blood from diabetics whose glucose levels are not well controlled. This has many advantages and avoids any ethical issues. The procedure also enables Canterbury Scientific to produce large batches, as there is no volume restriction, and to compete well on the world market."

The controls are prized by clinical labs around the world for being highly reliable with enhanced stability and shelf life, and are used for monitoring blood tests such as diabetic management, and calibrating equipment and processes on medical laboratory diagnostic analysers.

Canterbury Scientific today is a thriving company as a result of its quality products that compare favourably alongside some of the more recognised brands in the world. It has excellent product sales, individual technical service and supply, knowledgeable support, a first-class research and development team headed by internationally respected scientists, and now state-of-the-art laboratories designed to meet the most stringent quality standards.

The new facility in 71 Whiteleigh Ave, Christchurch, has been furnished with modern sophisticated systems, including temperature and humidity control, to provide an advanced and sustainable environment that meets world-class current manufacturing practices. The

building was opened by the Minister of Research, Science and Technology Wayne Mapp.

Prof Robin Carrell says, "The new premises are an indication of a watershed in the life of Canterbury Scientific as the company moves ahead into the wider field of medical biotechnology. There is keenness on our part to broaden and widen our range of products. It has been immensely satisfying to me, especially as an expatriate, to see how the company has met our founding aspirations, in not only opening career opportunities in New Zealand for our best graduates, but also in adding to and broadening the strength of medical science in New Zealand and in Christchurch in particular."

Canterbury Scientific is passionate about science and about providing the opportunities to ensure our top scientists are as challenged in New Zealand as they would be at any prominent organisation overseas.

To achieve this, the company sees huge importance and value in nurturing close relations with academic and research-based organisations including Canterbury DHB Laboratories, University of Otago, Christchurch (School of Medicine), and Cambridge University in Britain.

"Our aim is for Canterbury Scientific to be a sustainable company, with high potential and growth opportunities," says Neil Pattinson, the chief executive of Canterbury Scientific. "Having emerged from the CDHB, and with close relations with local science and health organisations, we're committed to encouraging the continued success of science in New Zealand. To support this endeavour we put aside 20 per cent of our annual profit for new research initiatives, summer studentships and grants, in addition to our own internal R&D commitment to further product development."

Company co-founder Robin Carrell says, "We chose Christchurch to assess the medical implications of our findings not just because of the prospect of a commercial product, but more importantly to encourage interaction and collaboration between the different medical groups in Christchurch. It is from such free interchanges that ideas formulate, ferment and develop to the benefit all."

In fact, the recent 6.3 earthquake brought local scientists a lot closer and much faster than expected when scientists from the University of Otago Free Radical Research Group moved in with Canterbury Scientific.

"Our new building is about three times the area of the building



**Leading edge:** Scientist Nicola Bowler inside Canterbury Scientific's new state-of-the-art laboratory facilities in Addington.

we recently vacated, as our original intention was to have ample space to grow over the next decade," says Pattinson.

He adds: "Apart from some glassware that fell from shelving, our facilities were barely affected by the quake. However, the Free Radical Research Group had to move out of the University of Otago, Christchurch, building due to damage and they asked if we could make space available for them. These are world-class facilities and it's an arrangement we can both benefit from, as we were looking for ways to strengthen our relationship with the University of Otago, Christchurch (School of Medicine). Their approach to us is a reflection of how the university views us and we were more than happy to put aside a formulation lab and section in our R&D lab for them."

Carrell agrees, "Biotechnology is a challenging field with the need to compete not only with Europe and the US but also increasingly with China, Singapore and India. It will require close liaison with local academic and service institutions, who will find that working together with industry will bolster Christchurch's future."

## Innovating towards a sustainable future

Like most leading exporters, Canterbury Scientific understands that it cannot rest on its laurels and expect continued growth without effort.

"While we can take great pride in what we have achieved, we can't rely on what has made us successful up to now also making us successful going forward," newly appointed chief executive Neil Pattinson says.

"As such, we need to continue to stretch our thinking. But one thing we can be sure of is that we

are in the right business for helping secure New Zealand's future prosperity."

Pattinson, a qualified clinical biochemist, aims to extend the company further into the broader field of medical science and to bolster Christchurch as a centre of scientific excellence.

He initially had 14 years as a research fellow at the Christchurch School of Medicine/Canterbury District Health Board, followed by a 19-year stint with a global biotech company.

He therefore brings significant knowledge in protein separation and function, together with broad corporate leadership and management experience within the biotech sector.

"If we are to achieve a sustainable future, we need considerable investment."

"While we already invest significantly in product development and customisation as part of our general operating costs, the board of Canterbury Scientific has made the strategic

decision to significantly increase the spend in new research and development and the broader support of medical science."

The first major initiative under this umbrella has been the appointment of a research scientist to work on a joint project with Cambridge University (UK), University of Otago, Christchurch (School of Medicine) and Canterbury Health Laboratories on developing a reference method for the hormone angiotensinogen, involved in regulating blood pressure. The work has possible implications in the understanding of the life-threatening medical condition of pre-eclampsia in pregnancy.

The organisations under the Ministry of Science and Innovation, NZTE and FRST, have been instrumental in supporting the company to reach its export markets. They have provided marketing opportunities and assistance to get to the right conferences and trade shows, and have even helped with overcoming regulatory hurdles. "Our vision is simple," says



**Research focus:** From left: Maurice Owen, Steven Brennan, Awa Zhou, John Veatch, Neil Pattinson and Darrell Wang.

Minister for Science and Innovation Wayne Mapp, who opened Canterbury Scientific's new facility. "It is that science and innovation are at the heart of our economy. As a country, we can build more wealth, jobs, export-led growth and social and environmental benefits through being smart and innovative. "In tough economic times, a commitment to research and development is important. Evidence shows that countries

and companies that invest in innovation prosper. Backing research and development will allow us to get more value out of our primary sector and will grow the clever, hi-tech companies we need to boost our economy. "Canterbury Scientific is a fine example of the success that can result when you marry quality research and development with business savvy." Pattinson agrees. "In the last decade, the New Zealand

Government has invested \$0.5 million in Canterbury Scientific. In return, we have generated over \$15.5m in export revenues, created employment for scientists, paid taxes, and invested in local services. So our track record in terms of return on investment is very good."

"The new premises are an important milestone as the company maximises its position and moves ahead into the wider field of medical biotechnology."

### Proud to help take care

It's organisations such as Canterbury Scientific that help the medical sector take care of our communities. Canterbury Scientific's work in the development and production of precision hematology and clinical biotechnology testing systems makes a major contribution to the careful monitoring and maintenance of our good health.

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### University of Otago, Christchurch is proud to be associated with Canterbury Scientific Limited.

In 2012 the University of Otago, Christchurch will welcome our 40th intake of medical students onto the Christchurch campus. One of the School's foundation staff members was Professor Robin Carrell, who played critically important roles in developing the research traditions within the University's Christchurch campus, and in establishing Canterbury Scientific Limited. As part of celebrating forty years of research and teaching the University of Otago, Christchurch will be establishing Carrell-Espiner Scholarships to support future young researchers.

The University of Otago, Christchurch is looking forward to continuing its tradition of excellence in research, and in working with organisations such as Canterbury Scientific Limited in the translation of research into benefits for our community.

[www.uoc.otago.ac.nz](http://www.uoc.otago.ac.nz)

### Congratulations to Canterbury Scientific on the launch of their exciting and innovative new premises.

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