

Biotech Daily's CEO interview

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CSIRO'S Dr GRAEME WOODROW: ALL HAIL THE CHIEF

Managing an annual budget of \$60 million of which more than \$40 million is biotechnology related makes Dr Graeme Woodrow the boss of one of Australia's biggest biotechs.

The Commonwealth Scientific and Industrial Research Organisation's chief of Molecular and Health Technologies has been part of the industry since its birth and is proud of CSIRO's role in many technologies, including the compound that became Biota's Relenza, and its role in spinning-out Peptech, Evogenix, Gropep and Polynovo.

The tall, thin 58 year old at the desk looking out over Melbourne's Princes Park is a 'Shore' boy, which he describes as the school that expelled Errol Flynn. Graeme Woodrow didn't follow that lead. He preferred athletics to rugby at the North Shore Sydney Church of England Grammar School and has been converted to the main game, supporting the Sydney Swans, despite his office's proximity to Carlton's home.

Graeme completed a Sydney University Bachelor of Science in microbiology with first class honors. His Doctorate of Philosophy from the John Curtin School of Medical Research at the Australian National University was on iron metabolism in *Escherichia coli*, in "the early days of the molecular biology which led to recombinant DNA".

"You couldn't buy restriction enzymes, then," Dr Woodrow says. "Everyone grew their own enzymes and we swapped what we had."

He spent six months at the University of Cambridge in 1976 studying organic chemistry before moving to the University of Basel to study the biogenesis of mitochondrial membranes and followed that with 18 months at the University of British Columbia's Regent College as an honorary visiting scholar, undertaking post graduate studies in ethics, theology and philosophy. It was 1978, the year Louise Brown became the first IVF baby and he just happened to be examining the ethics of in-vitro fertilization.

Luckily for science and research Dr Woodrow had his fill of theology and in 1980 took up a position as a research fellow supported by the Commonwealth Serum Laboratories, now CSL, at Monash University, where he cloned interferon genes in yeast and in the process introduced recombinant DNA technology to CSL.

In 1983 he joined Australia's first biotechnology company, the innovatively named Biotechnology Australia as "a bench level scientist", but quickly moved to management. The company's first human health program was a collaboration with the Walter and Eliza Hall Institute, CSL and the Queensland Institute for Medical Research on a malaria vaccine. The group also developed an anti-inflammatory PAI-2. The company was bought by German-based Hoechst, which Dr Woodrow joined in 1997. Hoechst later merged with France's Rhône Poulenc to form Aventis SA.

Following a brief period as CEO of the Sydney-based Inhalix and after 20 years in the private sector, Dr Woodrow was appointed chief of health sciences and nutrition at CSIRO. In a 2005 reorganization he became chief of Molecular and Health Technologies.

“Our core business is research and development. We want to transfer technology and improve health and well-being by delivering creative molecular technologies,” he says.

The division has adopted “radical innovation” whereby it will undertake higher risk work to reduce the risk to companies which then licence or contract CSIRO’s results.

Seventy percent of funding is from the Federal Government with the balance from other Federal Government departments, State governments, foreign governments and foreign companies. About 15 percent of the total budget comes from Australian industry. There is ongoing work on influenza funded by the US National Institutes of Health and the British Medical Research Council. The division has a relationship with Dupont.

“The 70 percent funding allows us to take the higher risk, but not as early as academics and we are definitely goal-directed,” Dr Woodrow says. He accepts that there is a need to experiment and take risks that inevitably ensure that some projects will fail.

“It’s a very tight rope to walk. We have a regular project review process and part of the role is to close projects and move people onto other projects. It’s the nature of research that there will always be failure, as well as success. You embrace it and need to manage it.” He says the determinant is setting proof-of-concept milestones.

Dr Woodrow cites among CSIRO’s many successes the extended wear 30-day contact lenses licenced to CIBA Vision – a surprising off-shoot from the creation of Australia’s plastic banknotes - along with its role in spinning-out Evogenix, Peptech and Gropep. With CSIRO and through the Cooperative Research Centre for Cardiac Technology Aortech was created to manufacture heart valves. The new use of polymer chemistry would be biocompatible and long lasting.

In contrast, the CSIRO and Xceed created Polynovo to develop biocompatible but biodegradable Novosorb a material for bone replacement, which can be preset to degrade over days to years. CSIRO retains equity in Polynovo.

“Part of my role in the new division of Clayton, Parkville and North Ryde is to lead the convergence of chemistry, material science and biology.”

He said major pharmaceuticals companies “will experiment with millions of compounds in their libraries” but Relenza was “one of few rationally designed drugs”. It was developed in CSIRO by Prof Peter Colman with the Victorian College of Pharmacy in conjunction with the State Government-funded Biomolecular Research Institute.

On May 3, 2007 Biota bought CSIRO’s royalties on the drug for an undisclosed cash amount and an initial placement of \$2 million in Biota shares, currently worth \$1.61 each. A further payment will be triggered if Relenza sales meet an agreed target.

Biota said at the time it expected a longer term gain from the royalties. Dr Woodrow says the payment gave CSIRO certainty of funding and cash for new projects.

“I know how biotechs struggle for cash and I came in here and saw the capability and the resources available and wanted to explore how we can make it more available for biotechs.

“So we created the Australian Biotechnology Growth Partnerships. It’s a flexible business model providing capability and assistance in return for delayed compensation depending on the need of the company,” Dr Woodrow says. “Some companies want to pay up-front but it’s not just cash - we’ll take equity as well, pending due diligence.

“As a government-owned entity we are interested in growing the industry and providing flexible arrangements. The aim is to provide assistance and boost the growth of local biotechnology companies, to help the industry become self-sustaining to provide jobs and opportunity in biotechnology without going offshore,” Dr Woodrow says.

The Bio 21 Collaborative Crystallization Centre is designed to meet the needs of medical research and biotechnology companies. The shared facilities are primarily for the Bio 21 Parkville cluster, with the majority at CSIRO’s Royal Parade building.

The facility allows for on-line control of experiments. While the analysis shown to Biotech Daily was for the nearby Walter and Eliza Hall Institute, it could just as easily have been for any place with internet access.

“With that and the synchrotron, we’ve picked up people from the [United] States we otherwise wouldn’t have,” Dr Woodrow says.

He says one of his main aims is to assist the growth of Australia’s biotechnology sector. Most companies are in the \$10 million to \$50 million bracket and need capital for technical capability which may only be required for a limited period.

His division can provide the technical capability in everything from synthetic organic and medicinal chemistry through molecular and cellular biology, to protein engineering, fermentation and processing, without the biotechnology company needing to train staff or make large capital expenditures.

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