

Professor Alan Kingsman, Oxford Biomedica

A devout academic

"I took two Birmingham degrees", says Alan, "a BSc in biological sciences and a PhD in the genetics of bacteria, finishing just when the technology leading to gene cloning was beginning. I then went to the molecular biology department in Edinburgh, one of the world's few centres, which could take DNA and chop it into manageable pieces, the pre-requisite for gene cloning and the foundation of the biotechnology revolution of the '80s. I was a devout academic, and never thought of going into industry."

"Then I spent two very exciting years in California working on gene cloning and the analysis of whole genomes, just when businesses like Genentech and Amgen were being established. Amazingly, both are now multibillion dollar corporations, but each began with a few academics who thought they could have fun creating a company. No one knew what their products would be but it seemed a good idea."

"In 1979, I was appointed to the biochemistry department in Oxford, perhaps its youngest academic for 150 years, and had more in common with students than fellow academics. Being one of the few people qualified in the new recombinant DNA technology - the basic science of cloning and manipulating genes - meant that when I arrived UK companies were immediately interested in my skills. So I soon became a consultant to Celtech, the UK's first biotechnology company. My relationship with the pharmaceutical and biotech industries had begun."

"From the 80's, I worked with companies like Glaxo, Amersham, Hamamatsu, Bass and British Biotech, filing numerous patents for the biotech industry. Soon the big laboratory I ran was earning in over £1 million a year in research funding, well over 50% from industry, and had a good international reputation, particularly in the USA. Some of our patents were licensed to companies but there were very few royalties then because these were early-stage technology patents. We did, however, get some cash later."

"Because of my immersion in recombinant DNA research when some early product patents were filed, I became an expert witness in patent litigation cases in which ownership of some early gene cloning inventions was contested. The most significant of these was in the London high court when Biogen and Medeva fought over rights to a hepatitis B vaccine. This was a formative experience because I worked with a team of the most intellectually powerful people I had ever met. Intellectual potency and rigour was not the exclusive domain of academics!"

Could I do it better?

"With all this commercial exposure, by the 1990s I was no longer a commercially naive academic. I had transferred considerable technology into the bioscience industry, developed views on how it was being used and, naturally, wanted to show I could use it better."

Around 1995 my wife and I – she was also a colleague – felt that a new technology package that we had put together during the early '90s could provide the basis for a company. So we established Oxford BioMedica, aiming to make gene therapy commercial. We had technical skills from many years working on gene structure and function, and great experience of working with viruses - the entities the company would use to deliver therapeutic genes. But we needed help."

Coming to the biochemistry department in 1979 I also became a tutorial fellow at St Catherine's College and "inherited" a student – Andrew Wood. In 1980, Andrew got a stunning 1st in biochemistry - and became an accountant. Perhaps I had put my first star student off biochemistry? When I met him again in 1996, however, biochemistry and accountancy proved a useful combination."

"Oxford BioMedia became a legal entity in 1995 but we took a year to create a business plan and funding strategy. Our quest for our first cash in 1996 attracted good press coverage. Andrew, then

working in a cable communication firm, saw this and asked if the new company might have a role for him. I was delighted; I now had my finance director who, almost uniquely amongst accountants, had a top first in biochemistry. Andrew has contributed hugely to the company with skills complementary to my own. Oxford BioMedica would not be where it is without him."

Handling the patents

"From the beginning, filing patents from my university group and licensing them to companies was a DIY process. There was no successful ISIS and the university administration's only comment was that we could do what we liked provided the university was not sued! They wanted no cut, no share of royalties - nothing. So I hired my own lawyer and negotiated commercial terms." This was a new experience for Alan though, as other cases on the site show, things later improved. The university became more interested and ISIS innovation was formed although it was only after Tim Cook arrived in 1997 that ISIS became today's powerhouse. Alan adds, "When we formed Oxford BioMedica we negotiated for ISIS and the university to share in the company's equity in exchange for my group's patent portfolio."

A different funding approach

"By mid '96, we thought that we could raise serious money and build a new biotechnology company and, in fact, since then Andrew and I have raised £86 million from public markets in seven financing deals. We listed on AIM in December 1996 and moved to the Official List of the London Stock Exchange in April 2001."

"Our very first seed money came from individuals. Initially, we assumed we'd go the classical VC route and VCs did show a fair interest, but, at that time, I was not keen on VCs as a breed. In my earlier associations with biotech companies I saw that many had real trouble managing the VCs and was keen to find another source of finance. In late 1995, after the AIM market opened, I sat at a dinner with Rod Hall. A successful financier, Rod managed several big funds, and was chairman of Oxford Molecular. I explained our ambitions and he said, "go straight to AIM. You have done the blue sky research, and know the products you want to build. You are beyond the blue sky stage. You are not ready for the LSE, but AIM might suit you". He then helped to identify a City broker – Teather and Greenwood – who agreed to sponsor our immediate listing on AIM and acquire related funding."

"To raise enough cash to pay advisors' fees, T and G organised a private 'pre-float round', raising £750,000 in August 1996 and, in December, another £5 million from the AIM flotation."

New directors

"By then two other key figures had joined us. Sir Brian Richards became our Chairman. He was a founder of British Biotech, which pioneered the listing of loss-making biotech companies on the LSE.

A longstanding pharmaceutical businessman and research leader, Brian was also chairman of Peptide Therapeutics in Cambridge and acting Chairman of ISIS. I met him when British Biotech headhunted me to become their director of research in 1986. I didn't take the job but spent two years on 50% secondment from the university setting up their molecular biology capabilities. Consequently, I got to know Brian well and learned much about the tribulations of start-up companies. I also made investor presentations in the City and so learned to communicate with financiers - very useful for my role as CEO of Oxford BioMedica. Brian was a natural choice for us and he introduced Alan Goodman, a serial biotech entrepreneur who also joined our board. The Board was complete".

Starting off

"Until we raised our AIM money we started in one room in the Oxford Science Park, but had two further floors in the neighbouring Medawar Building earmarked, and in January 1997, following the successful AIM flotation, started building labs there. By mid-1997 we were up and running, with six people for the first six months and 25 by mid-1997. We now (October 2004) number 65 having been 95 in early 2002. We reduced staff and costs in 2002/2003 because the markets were clearly

not going to support biotech companies for some time. We also have a wholly-owned subsidiary in San Diego, with 3 people."

Handling the City

"Once listed on AIM, we had public market shareholders to deal with - a completely new experience for me. Though challenging at times I wouldn't have changed our strategy, having found it better to deal with public markets than VCs. Interestingly, my lecturing experience was extremely valuable in communicating our message to the City. One has to tell complex stories clearly, and with sympathy for one's audience."

Andrew Wood had also dealt with the City as finance director of several companies in engineering and newspapers, and also in a cable TV and telecoms start-up which became a public company. Andrew says, "I became used to many issues around the administration and organisation of companies which started from nothing and needed regular capital injections of capital. Dealing with the press is interesting and challenging. You must never put a foot wrong; every bad thing you say is magnified; every good thing ignored. That is how the game works and you must play it accordingly. Oxford BioMedica has established a good reputation for not over-promising, but telling a good story and delivering on it. That was why we could go back to the market seven times."

Alan Kingsman continues: "The biggest challenge in financing through public markets is that sentiment – especially towards biotech companies - goes through extreme cycles. The UK market rarely offers continuously two or three favourable years. You must plan to visit the market quite often, dealing with it each time as it happens to be. Our financing has mainly been through institutional share placings. When we have raised new money, existing shareholders usually contributed significantly but we have also attracted new shareholders at each round."

"Our share price has varied crazily from 88p at the float to a 130p high and a 6p low. So shareholders have had mixed experiences: some making substantial money, some losing. Significantly, no price fluctuations were due to bad company news, but to market sentiment. We have had to manage that roller coaster – perhaps our biggest management challenge. After the dot.com boom, came a biotech boom - then prolonged, severe anti-biotech sentiment during 2002 and early 2003. It's getting better now."

Developing the company – and finding partners

"Having established the company, some very early-stage work established what products we wanted to build and what "bits" to put into them. It therefore became a matter of "doing it", using model systems to show that what we expected to happen did happen before products went into man. Our staff are mainly scientists, who assemble and test our products. Virtually everyone, except for secretaries, has a scientific qualification. We have roughly equal numbers of men and women, quite a good racial mix and many staff aged around 30."

"We specialise in cancer and neurotherapy – Parkinson's disease, motor-neuron disease - and have seven products, two for cancer and five for neurotherapy. Both cancer products are in phase II clinical trials and show signs of efficacy. The neurotherapy products will enter the clinic by October 2005."

"With our products now reaching the key stages of proof-of-principle either in man or animals, a major activity is to find partners from the pharmaceutical industry. Our primary market is the industry, not the patient. We attend many "partnering conferences" specifically arranged to help companies to do deals. We collect substantial commercial intelligence on whom our products might interest and why, identify relevant decision makers in those companies and bombard them with information."

"Oxford BioMedica has experienced very hard times when it was not clear how we would keep going. Consequently the staff have strongly identified with the Company and they understand that to succeed we must sell products – we are not a research institute." About a year ago, Alan told

them all: "You are all in business development. Your top priority is to bring us commercial deals and cash." They have largely responded well, and Alan continues, "Because our pharmaceutical company customers ask tough technical questions before they buy, the best salesmen are technical people, selling to technical counterparts. For us business development is therefore a very technical issue and we reward success through a bonus scheme where all bonus-related goals are commercial."

"Several of our seven products are almost off our hands - built and tested. We contract out the manufacture for the clinical trials in man - trials are monitored by our in-house clinical team but also by outside contractors. So there is intense activity preparing a product for testing in man but once that begins in-house activity tails off. Companies purchasing our technology or products fund the products' future development, not us."

Funding development

"Our most important partner is Wyeth who is co-developing a cancer product with us. They cover all the costs, do all the work in-house and will pay us \$24 million in up-front milestone payments and a healthy royalty once the product is marketed."

"We are very focussed on our seven products. We do not intend to fund their programmes for the full ten years or more that it takes from concept to marketed product. We spend enough to demonstrate a proof-of-principle for the product - then licence it to a larger company which finances the more expensive later stages of development. Our costs end and the client pays to license the product - plus making milestone payments. So our commercial return begins within the 10 year development period - a standard model in biotech. TroVax is attracting significant interest and we hope to have a co-development partner for it soon and for it to be marketed around 2008/9."

"We always intended to work in cancer and neurobiology. Cancer first because it can reach the clinic fast, with loads of scope; then neurobiology because our technology is particularly suitable. Early on we faced snide comments about Oxford boffins being unable to manage biotech businesses. So we wanted to show we could get our products quickly into the clinic - and we did. For me, our most exciting field is neurobiology but we had to apportion our resources appropriately so initially cancer got the lion's share to establish our credibility, and we really have earned our spurs now. Our neurobiology approach is so revolutionary that I think we may be able to make a real difference to serious diseases such as Parkinson's. The next two years will tell."

My best thing

"Setting up Oxford BioMedica is the best thing I have ever done. It has been exciting, intellectually stimulating, challenging - heartbreaking at times. Our people are superb and doing fantastic science that may make a real difference to people and, of course, money for our shareholders."

Douglas Hague, October 2004