The Foundation for Science and Technology

Respondent's remarks to a lecture by Sir Greg Winter on 7th March, 2012 at The Royal Society

Dr Neil Brewis, VP Biopharm Research, GSK

Thank you for this kind opportunity to respond to Greg Winter's talk. During my career I have worked in academia, then in the SME biotech community – which included a company called Domantis which Greg Winter co-founded - and now for a pharmaceutical company. I welcome this opportunity to give my perspective on his presentation.

We've heard of the opportunities using monoclonal antibodies to dramatically impact a large number of diseases and bring transformational benefits to the patients. Monoclonals (mAbs) are potent, specific and indeed we understand much about them. But the hurdles are also equally high – we are dealing with intricate, large structures, made by engineered cells in large fermentation tanks. There is a great deal of complexity involved. Let me exemplify this for you; if I was to bring in a copy of the manufacturing regulatory submission for market authorisation, then one for a small molecule or "white pill" would be several hundred pages long whereas a mAb regulatory submission would form a stack up to my midriff. Moreover, as you are all aware, the development of new medicines is extremely expensive, upwards of £1bn. Now while mAbs have a higher chance than NCEs of successfully progressing through the various stages of clinical development, there are more failures than successes. At the same time the healthcare budgets of most countries are under intense pressure, which impacts directly upon the way medicines are developed.

From where I am working today, the old R&D model of a pharmaceutical company producing a portfolio of meaningful medicines, whilst operating independently to the outside world, is now well past its sell by date. It is simply untenable for companies to try to do all of the necessary R&D alone and that is why you will have seen an increased focus on externalisation from the pharma sector. We should look for relationships which create synergies between the essential cogs for drug discovery: academia and pharmaceutical companies and, as Greg pointed out, the SMEs.

There are three points that I would like to make about how we create a vibrant biosciences sector needed for the discovery and development of novel medicines:

1. Large pharma companies working collaboratively with SME's and academia. This is clearly where we should share risk and reward – something which companies have done and continue to do well together–as you've seen from some of the examples Greg showed. Sharing risk and reward is becoming more acceptable to academia.
2. Pharma working to promote a vibrant sector through a more "open" approach to innovation. Examples of this include AstraZeneca giving the academic community, via the MRC, full access to 22 experimental medicine drugs, and GSK making land available

next to our research centre at Stevenage and working with the Wellcome Trust and the Government through BIS to help establish the Stevenage Biosciences Catalyst (SBC). Through our contribution to this new science park GSK will seek to support the establishment and growth of successful independent SME bioscience companies on our doorstep. GSK is happy to share our expertise and spare equipment with future SBC tenants if in return this resulted in the UK biosciences sector as a whole becoming more successful. Greg has shown that IP funds future innovation. I think we can create a healthy balance between creating and protecting IP whilst at the same time being more open with assets such as the phage libraries that Greg spoke about.

3. The human scale. While we all work on a world stage, and companies such as GSK look for business and research opportunities where ever they may be globally, I was struck by one of Greg's slides that showed clearly how much the UK has contributed in this field. The UK is clearly punches beyond its weight in innovation- but how best can we exploit this? I believe there is a human benefit when clusters of academia, biotech and large pharma companies are able to develop in close proximity – from that I mean commutable on a daily basis. Whether it's around Cambridge, London, Oxford, the North West of England or in Scotland, it strikes me that not only do clusters allow you to create a critical mass for Finance and IP lawyers but also provide a more human-scaled approach to working together. In particular it's beneficial for individuals to move jobs from one sector to another without the need to up-root personal and family life – like many I have seen the large advantage of moving from biotech to pharma without relocating. Cambridge has the biggest concentration of biotech in Europe, some of that is undoubtedly contributed to by mAbs and some of that has contributed to the success of these medicines. This flow of ideas and individuals will only gather pace in the coming year and will bring benefit not only to the individual contributors but moreover to the regions. We should continue to identify and overcome any bottlenecks that may inhibit the growth of such clusters.

The monoclonal technology wave has been highly impressive but clearly further innovation will come along to improve the benefits to the patients. We're clearly a world stage and although countries such as China are making great progress and racing forward in the science arena, I see positive signs around us in the UK too. We've heard from one of our outstanding innovators here tonight. The MRC is really open for doing business and pharma is looking for ways to encourage external innovation. It is also pleasing that the UK government is looking seriously at what can be done to strengthen the biopharm sector – both big and small companies - e.g though initiatives such as an 'ideas fund' and improved tax breaks for companies working in the UK. GSK firmly believes that there is a need for a strong SME biotech sector in the UK. This must be a priority for us and we all need to play our part in the delivery of it.