

# LIFE SCIENCES: The Next Wave



**Dr Simon Haworth** BSc PhD, Founder and Chief Executive Officer of Dynasty Biotechnology Limited, discusses UK-China life sciences collaboration and innovation

**L**ife sciences has been in the news recently due to the aspirations of Pfizer. But until the American pharma giant decided that a UK tax benefit and a range of new cancer drugs might fit rather nicely within its global business, few in the Sino-UK world paid as much attention to life sciences as to, say, infrastructure, real estate deals or automotive.

Pfizer's approach to Astra Zeneca – seen by some as custodian of half of the UK's life sciences Crown Jewels (GSK holding the other half) – certainly raised the profile of the sector and resulted in acres of comment from UK politicians: "We love and protect our ability in technology" they said. But many in China don't really understand why the UK has such resilient belief in its 'world class' life sciences innovation. Let's face it; China is brilliant at innovation too. Is what we do so very different?

According to the World Intellectual Property Organisation (WIPO) figures, China made more than

28 times as many patent applications in 2012 as the UK – 652,777 versus 23,235 – and about 20 per cent more than the USA. Of these, approximately 44,000 of the Chinese applications were in life sciences compared to fewer than 2,000 in the UK, and China made more than four times as many international Patent Cooperation Treaty (PCT) filings as the UK. Perhaps the UK isn't so good at life sciences innovation after all.

But what is 'innovation'? To most people in China it is "the incremental improvement of technology" or something similar. China has extraordinary ability in refining technology. But the bit that we excel at in the UK is a tiny, special part of the innovation cycle: the Eureka Moment, the spark of genius, the inspired but risky step that leaps way beyond the boundary of existing knowledge and creates something utterly original. This is what creates both the real Crown Jewels of UK life sciences innovation and also the real opportunity for the forthcoming wave of Sino-UK life sciences trade. Whilst big pharma has discovered that it can't do discovery

– because the necessary original thinking now resides firmly within the smaller companies and university departments – UK life sciences SMEs have discovered that China has an appetite for their knowledge, funding for the development of their IP and a market for their novel products.

China seeks new drugs and new revenue-generating enterprises, and the UK seeks new funding sources and access to growing markets. Each party satisfies the other.

"Dr Haworth is right to champion the opportunities for Sino-UK collaboration in the field of life sciences," said Liu Xiaoming, China's Ambassador to the UK, in London recently. "Life sciences is one of the most important areas for collaboration and I congratulate Dynasty Biotechnology on the progress they are making in partnership with Chinese firms and regional government institutions."

HE Sir Sebastian Wood, Britain's Ambassador to China, echoes these sentiments. "I was delighted to learn of the successes that Dynasty Biotechnology has delivered in China. UK-China life sciences

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collaboration has the potential to bring great benefit to both nations and improve the quality of life for millions of people. For this reason I am very happy to see this progress and highlight it as another example of excellent cooperation with our Chinese partners,” he says.

So where can the UK life sciences industry contribute most? We need to work with drugs that are both China-relevant, and China-ready. China has growing incidence of so-called ‘Western’ diseases – cancer, heart disease, obesity etc., plus a high incidence of some infectious diseases such as TB – so finding drugs that are China-relevant is easy. Being China-ready is harder, because the low affinity for risk means that China normally starts to get excited by a drug in development only when that drug enters the clinic for its first human trials. In practice, Chinese investors prefer to be even more risk averse than that and want products that are no more than two years away from either revenue or some other value inflection point.

If we want to increase the traffic over this particular bridge, then we need to make sure that there are plenty of vehicles carrying later-stage technology. European investors should be firmly on board, because assets that one can develop in China tend to attract grants and royalty-based funding – the top Chinese science parks are all interested in UK life science technology, each offering grants or royalty-based investment to tempt companies to locate operations on their particular park, and the majority of these Chinese programmes accept applications from non-Chinese nationals. As a result, an investor can leverage their equity investment with Chinese non-dilutive funding.

However, one of the issues comes down to simple numbers. Comparing the billions involved




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in a new airport construction compared to the mere millions involved in a typical biotech funding and development programme means that, as the Pfizer-AstraZeneca furore dies down and life sciences drops back from the collective consciousness once more, real estate and other asset-rich Sino-UK deals could again gain all the attention.

But we must not let this happen. UK innovation creates novel drugs that save lives. On a global scale UK drug and medical device technology can save millions. Through product innovation partnerships with China we can add hundreds of thousands of patient years, save countless children from premature death, improve quality of life for millions and develop new therapies to address the world’s critical healthcare issues.

Our respective governments are at last getting the message. Three major life sciences deals featured alongside the real estate and high speed rail announcements witnessed by Prime Minister Cameron and Premier Li Keqiang in London last month. Life sciences has arrived.

China and the UK are set for a long-term, mutually beneficial, growing relationship built around world-beating life sciences technology. Motives are complementary and a new, integrated pipeline of novel drugs and devices awaits us if we are prepared to commit to the partnership. Or, as Ambassador Liu concluded: “If our science entrepreneurs can work together, then we will have an extraordinary impact on global healthcare. That is an outcome worthy of our joint commitment.” 

DR HAWORTH SPEAKS REGULARLY ABOUT SINO-UK LIFE SCIENCES OPPORTUNITIES.  
SEE [WWW.DYNASTYBIO.COM](http://WWW.DYNASTYBIO.COM) FOR MORE INFORMATION.