

Researchers ask: Is China the sleeping giant of biotech?

PARIS (AFP)



A bottle containing a vaccine against bird flu from Beijing-based pharmaceutical company Sinovac Biotech. Experts say that Chinese purveyors of genetically engineered drugs and vaccines -- targeting everything from cancer to Alzheimer's -- are growing at a frenzied pace and are likely to become major actors on the world stage.

China's biotech sector accounts for just a sliver of its pharmaceutical industry and operates under the cloud of a massive review of licenses issued under a regulator executed last year for accepting bribes.

Even so, experts say, Chinese purveyors of genetically engineered drugs and vaccines -- targeting everything from cancer to Alzheimer's -- are growing at a frenzied pace and are likely to become major actors on the world stage.

"There is no question that the sector is established," said **Peter Singer of the McLaughlin-Rotman Centre for Global Health in Toronto** who was lead researcher of a study published

Monday in ***Nature Biotechnology***.

"What we found really surprising is that in an industry that's only 10 years old, China has innovative products on the market," he told AFP.

For their study, Singer and his colleagues selected 22 small- and medium-sized biotech firms from literally thousands operating in the health sector for close scrutiny. They looked for companies that were innovative, both scientifically and in business.

The portrait that emerged is of a dynamic sector that has been growing 30 percent annually over the past decade, reaching a turnover of three billion dollars in the domestic market in 2005.

Yet its activity is dominated by a few big stars and remains dogged by doubts as to its integrity.

It is also a sector led in large measure by "sea turtles" ("hai gui") -- Chinese-born scientists with a decade or two of US or European lab experience under their belts who have come home to found Chinese companies, often with generous backing from the government.



A researcher at Beijing-based pharmaceutical company Sinovac Biotech. Experts say that Chinese purveyors of genetically engineered drugs and vaccines -- targeting everything from cancer to Alzheimer's -- are growing at a frenzied pace and are likely to become major actors on the world stage.

In a market of one billion potential patients, 15 biotech products for health are already on the market, with another 60 in the pipeline, Singer said.

Exhibit A: Gendicine, the first gene therapy product approved after clinical trials anywhere in the world.

A recombinant human adenovirus, Gendicine carries the p53 gene and is administered by injection directly into cancerous tumours in the head and neck, including nasopharyngeal carcinoma.

More than 5,000 patients have received the treatment in combination with radiotherapy, including 400 foreign patients from outside China.

The company became profitable shortly after the launch of the product, approved in 2005 by China's State Drug and Food Administration (SDFA).

That, as it turns out, was not an unimpeachable recommendation.

The SDFA's former director, Zheng Xiaoyu, was executed in July 2007 for accepting bribes in return for issuing drug approvals

without proper review.

As a result, a staggering 170,000 licenses granted by the SDFA, especially between 1999 and 2002, are currently under review.

Another company, Shenzhen Beike Technologies, provides a treatment based on umbilical cord and bone marrow stem cells for Alzheimer's, autism, brain trauma, cerebral palsy and spinal cord injury, as well as a dozen other diseases and conditions. The medication is injected directly into the spinal cord of patients.

"There is no need to do clinical trials for this kind of procedure in China," said the study's lead author, Sarah Frew, also a researcher at McLaughlin-Rotman.

"The approach this company is taking is trying the thing on patients rather than doing scientific research," added Singer.

The product has nonetheless been a commercial success, first with Chinese patients and more recently with international patients. When Frew visited the clinic a year ago, there were a dozen foreigners present.

The company's website is filled with glowing testimonials on the effectiveness of the treatment, which costs tens of thousands of dollars.

In most cases the therapies and vaccines developed in China are far less controversial. Indeed, more than 90 percent of products produced in the health biotech sector are biogenerics, with novel products accounting for 3-to-5 percent of the total.

A more recent development are international joint ventures and investment. Shenzhen Chipscreen Biosciences, for example, has developed an anti-cancer drug in cooperation with Huya Bioscience, based in San Diego, California. Once the medication is on the market, the Chinese partner will hold the rights for China, while Huya can lay claim to the rest of the world.

WuXi PharmaTech, which was listed on the New York Stock Exchange in the summer of 2007, is the first biotech service company in China with major foreign clients, including US pharmaceutical giant Merck and Britain's AstraZeneca.

The fact that WuXi has attracted such companies "punctures a little bit the legend that there is no intellectual property in China," said Singer.

Another myth that may soon fall by the wayside is that China can only reproduce what other have done already.

"There is no longer a hegemony on the part of industrialised countries in global biotech innovation," Singer said.

© 2008 AFP

07/01/2008 23:15:54 UST