

I Overview of red biotechnology in China

- Introduction to red biotechnology

Biotechnology has developed fast in the past decades around the world. It mainly includes pharmaceutical biotechnology (red biotechnology), industrial biotechnology (white biotechnology), agricultural biotechnology (green biotechnology), marine biotechnology, etc.

.....

- Role of red biotechnology in medicine industry

Compared with the entire pharmaceutical industry and other sub-industries, such as chemical medicines and Chinese medicine, bio-pharmaceutical accounts for very small proportion. Its output value constituted only around █% of the total of China's medicine industry in 2008. However, its development potential is very great. Its output value growth rate was higher than that of chemical medicines and Chinese medicines, with CAGR of █% in 2004-2009. In 2009, RB products industrial output value was around USD █ million, up █% year on year in 2008.

.....

➤ **Manufacturers**

Though demand for human albumin exceeds supply, the facts that lack of raw materials and their price increase, as well as increasing mergers and acquisition, force some blood product manufacturers to suspend their human albumin production and the number of active ones decreased during 2004-2007. In recent two years, there have been █ active human albumin producers in China. Production scale of most of them are small and only several manufacturers have plasma processing capacity over █t/a.

.....

Table III-2-1 Some major human albumin manufacturers in China, 2010

No.	Company	Plasma processing cap. (tonne)
1	Hualan Biological Engineering Inc.	█
2	Shandong Taibang Biological Products Co. Ltd.	█
3	Chengdu Rongsheng Pharmaceuticals Co., Ltd.	█
4	Sichuan Yuanda Shuyang Pharmaceutical Co., Ltd.	█
5	Shanghai RAAS Blood Products Co., Ltd.	█
6	Shanghai Institute of Biological Products	█
7	Guiyang Qianfeng Biological Products Co., Ltd.	█

Source: CCM International

Some blood products manufacturers have been listed in China, such as Hualan Biological,

Shanghai RAAS, Tiantan Biological, etc. In 2008, the sales income of Hualan Biological and Shanghai RAAS were USD [redacted] million and USD [redacted] million respectively. And Hualan Biological's sales income increased to USD [redacted] million in 2009.

.....

Chinese producers are generally small-scale compared with foreign enterprises. Few of them can achieve annual sales for diagnostic reagent of more than or close to USD [redacted] million. Less than [redacted] producers can obtain annual diagnostic reagent sales of more than USD [redacted] million. The average profit rate has been low due to the price war induced by cutthroat competition and copying the technology from each other, etc. Average profit rate has decreased from [redacted]%-[redacted]% to [redacted]%-[redacted]% in the past 5 years.

Table III-4.3.1 Major diagnostic reagent producers in China, 2008

No.	Company	Abbreviation	Type of Company	Product	Output value, USD million
1	Shanghai Kehua Bio-engineering Co., Ltd.	Shanghai Kehua	A share listed	Biochemical diagnostic reagent, Immunodiagnostic reagent, Molecular diagnostic reagent	[redacted]
2	Da An gene Co., Ltd. of Sun Yat-Sen University	Da An gene	A share listed	Immunodiagnostic reagent, Molecular diagnostic reagent	[redacted]
3	Biosino Bio-technology and science inc.	Biosino	H share listed	Biochemical diagnostic reagent	[redacted]
4	InTec Products, Inc.	InTec	American owned	Immunodiagnostic reagent	[redacted]
5	Shanghai Fosun Pharmaceutical Group Co., Ltd.	Shanghai Fosun	A share listed	Biochemical diagnostic reagent	[redacted]
6	Sino-American Biotechnology Company	Sino-American Biotechnology	American owned	Immunodiagnostic reagent, Molecular diagnostic reagent	[redacted]
7	Livzon Pharmaceutical Group Inc.	Livzon	A share listed	Biochemical diagnostic reagent, Immunodiagnostic reagent, Molecular diagnostic reagent	[redacted]
8	Shenzhen PG Bioengineering Co., Ltd	Shenzhen PG	Germany owned	Molecular diagnostic reagent	[redacted]

Source: CCM International