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# Biotechnology in China



## A Guide to the Chinese Biotechnology Industry

Case 4: Bicol



#### 4.4.5 Case 4: Bicoll

The Bicoll case concerns the first Sino-German biotech company Bicoll group, located in Munich, Germany and Shanghai, China. Below, an introduction of the company, kindly provided by the Bicoll Group, is followed by an extensive interview between the author of this report (Q) and Dr. Kai Lamottke (KL), Managing Director of Bicoll and Dr. Heinrich Arnold (HA), Head of Business Affairs of Bicoll. In this interview, Bicoll tells us about its rationale behind setting up the company simultaneously in Germany and China, the scope of its business activities in China, the role of its German company, important factors in establishing the Chinese company and the key issue of building up robust personal relationships. In addition, Bicoll shares with us its experience in managing the company across continents, insight in doing business in another cultural environment, intellectual property (IP) protection issues in China, observations and thoughts of the Chinese biotech industry and Bicoll's networking activities with Chinese companies. At the end of the interview, Dr. Arnold comments on the likely upcoming trend of relocating research from the Western countries to China and what that would mean for the Chinese biotech companies as well as the Western companies.

The "Bicoll Group" is the first Sino-German biopharmaceutical enterprise. It was founded in 2001 with two legal entities: Bicoll GmbH in Munich, Germany, and Bicoll Biotechnology (Shanghai) Co. Ltd. in Zhangjiang High Tech Park, P.R. China. Technology development, cooperation management and marketing are functions in Munich, while facilities for research and development are located in Shanghai.

The company is specialized in high-tech natural product chemistry with a focus to make compounds from natural resources compatible with drug discovery systems in modern drug research.

Bicoll's primary products are optimized small molecule libraries for drug discovery in the biopharmaceutical industry. The libraries are tested and developed for fee and milestone payments in co-operations. They are customized to the target protein of the partner's indication field to provide a high success rate in screening and further development. The starting material is generated from endemic Asian plant resources.

Bicoll has two proprietary core process technologies BIFRAC N and BIPRESELECT.

BIFRAC N is a high resolution, high efficacy isolation and separation system for the delivery of biologically active compounds. The resulting compounds have physico-chemical properties - such as a certain range of polarity or molecular mass - that are required for the further development process. Bicoll claims to be the only company that can provide compounds from natural resources suited for HTS at cost comparable to combinatorial chemistry sources.

The BIPRESELECT pre-selection tool allows to narrow in on compounds with selected ADME criteria. Thus non-successful drug candidates, which would otherwise block the drug development pipeline, are supposed to be eliminated early.

Just three years after its foundation, the company already sells its research products to five strategic customers in the pharmaceutical industry and leading research institutions.

Additionally, Bicoll follows up its own in-house development projects such as diabetes type II, and is currently building up expertise with a new approach in the area of oncology.

## Interview

**Q:** It seems quite unusual to start up a company simultaneously on two continents – especially in countries that are quite different at first sight like China and Germany. What made you decide to start up a company in these two countries?

**KL:** The access to bio-diverse plants plays a crucial role in our research. The core competence of Bicoll is to make natural products – a historically very successful source of new drugs – applicable for the modern drug discovery and development approach as it is followed by the modern biopharmaceutical companies and the large international pharmaceutical corporations. Bicoll's vision is to initiate a renaissance of natural product chemistry within the modern pharmaceutical research. Now this characterizes the situation Bicoll is in: On the one hand, our research partners and customers are mostly located in Europe and North America. On the other hand, we need to work with plant resources that occur in only very few places in the world, the so-called "biodiversity hot spots".

**Q:** So, it would not have been possible to start up Bicoll in one country alone?

**KL:** The founding team was Chinese and German anyway; but apart from personal preferences there are a couple of hard facts: As far as the plant resources are concerned, the Rio Convention of 1992 and the Bonn Guidelines of 2002 require among others the "equitable sharing of benefits" from using endemic plants and "sustainable use of biodiversity". Therefore it is no option to collect plants and fly them out of the country for further analysis without benefit for the originating country. The biodiversity hot spots are in places like Congo, Peru and other "jungle" places where evolution has produced a high degree of organism interaction and diversity. China is one of the few countries where you could seriously consider the set-up of some sort of advanced organization to do effective analysis and drug research. So, for us, there was no way around China to produce a significant share of Bicoll's added value. In our current structure, we do a large portion of our research and development in China.

**HA:** There are three important elements to our activities in China:

First, we have found good collaboration partners that do the botany part, i.e. the plant selection, for us. We train them with modern techniques for localization and documentation. One of the results is an electronic inventory of the plants we encounter. Part of this inventory is accessible for free on the web at [www.biflora.org](http://www.biflora.org) and is especially valuable for scientists and environmental policy makers.

Second, we have our own lab in Shanghai, where we carry out the proprietary high-tech natural product chemistry processes.

Third, we are lucky with our cooperation with the Shanghai Institute of Materia Medica, where we have access to world-class talent and also large scale high end equipment in the field of natural product chemistry.

**Q:** What's left to do for your location in Germany?

**HA:** In Germany we do marketing, project management with customers, cooperation management, and technology development.

You should never underestimate the importance of marketing an innovation (Arnold, 2003). In our case it is hard enough to convince people that we are the ones that have found a way to make natural products fully compatible for HTS at costs that are even lower than dealing with synthetic substances. Of course, with every customer we add to our list this process becomes easier. After all, we speak about a substitution of so far rather unsuccessful synthetic substances by natural compounds as starting point in drug discovery. To our observation, arguments regarding credibility are received much better when they are made by a contract partner in Western Europe or the US.

Closely related is international project management. It is not enough that we send substances to our customers and leave them alone with it. We assign project managers who have excellent skills in English or German, besides their scientific education, to accompany our customers throughout their work with our products. The people that can do this are in fact very rare in China.

**KL:** Then there is the aspect of having access to biotech clusters where we can tap into the most advanced thinking in drug research. For this purpose we could certainly also be located in other biotech clusters like in the Boston area.

Chinese research is in many aspects very good, but when it comes to transfer experimental results into a well-documented process that runs after SOPs you require a skill which Germans are trained to produce in very good format.

And we certainly need to stay abreast with our technology lead. For example, we claim to have the technology with the best resolution and yield in place. We want that this continues to be like this. So this is one more thing we push for in Germany.

**Q:** For our Western – especially German – audience, let's talk about the process you had to go through to start your Chinese entity. In "Biotechnology in China - Picking new therapeutics" (Feling and Lamottke, 2002), you said that "assisted by the Delegation of German Industry and Commerce (AHK), Bicoll could deal with all the formal (and informal) problems in setting up an initial infrastructure in Shanghai." Could you elaborate a bit – what the formal and informal problems were and could you give an example of how the problem was solved with the assistance of AHK?

**KL:** The initial founding team consisted of three chemists from Germany and China, and we were glad to get the assistance of AHK. AHK gave us a good view of the requirements for setting up a company in Shanghai, and of the documents that need to be prepared. We worked together to get things done. The process we had to go through looks complex to non-Chinese, however, it is in fact not more complicated as compared to the equivalent process in Germany. There were some unique problems such as identifying the Chinese agency responsible for dealing with biodiversity issues. And we needed to get access to the authorized local counterparts as well. As we mentioned already earlier, this was an especially necessary aspect for our overall business concept, but I really don't know if we would have managed all the necessary steps without the involvement of our Chinese founding partner who had an established local network. We were very happy that our founding team knew each other already per-

sonally for quite a while and that we could really trust each other. Building up a robust relationship is very important in Europe as it is in China.

**Q:** It sounds like personal interaction is a key part in establishing successful operations?

**HA:** Yes, indeed. There are so many examples of how international projects fail because the partners have no open interaction or even worse, mistrust each other. In my eyes, it would not have been possible to build Bicoll in a green field approach. Without the personal relationship that had been established among the scientific founders through their joint research long before the actual initiation of the company we would have not come so far. I would even say, Bicoll is the result of some international scientific cooperation programs.

**Q:** Two of the founders Dr. Haug and Dr. Ye knew each other during their Ph.D./post-doc time at the University of Munich and Dr. Haug then did his post-doc research on a DAAD fellowship in Shanghai. Was Dr. Haug's stay in SHA essential for Bicoll to set up its Shanghai subsidiary?

**KL:** Dr. Haug is the only German postdoc in this special issued DAAD program along with 139 Chinese colleagues from all over China. He and Prof. Ye have known each other for eight years now.

**HA:** But Bicoll is not the result of a University spin-off. All of the team members spent several years in industry and research institutions before they took the step into starting their own venture.

**KL:** Before Bicoll Shanghai was officially set up, there was also a pre-phase for infrastructure building up – machinery, connections to people, etc. It takes time to build up stable long-term relationships.

**HA:** You can also say that Bicoll could only come into life because the personal relationships existed beforehand. I guess, if you tried to build up what Bicoll has now without this initial network you would have to spend about 10 times more resources.

**Q:** Managing Bicoll - a biotech company crossing continents and cultures has been described in the article entitled "Pionierarbeit – auch in der Mitarbeiterführung" (Haug and Lamottke, 2004). What would you describe as your daily challenge in managing across continents?

**KL:** As our company started to grow we began to hire more staff. And the new colleagues in our laboratory brought new challenges for the management of our company. The first issue we had to address was clear communication structures.

**Q:** One key point, which was also voiced by several companies doing business in China at an IHK Frankfurt meeting over China, is that Chinese employees need to

have clear job descriptions and clear reporting structure in place. They are not yet used to teamwork.

**KL:** For our Chinese founding members that have international exposure and experience during their education and career this does not apply, but for some of our lab staff this is certainly true. So we put a lot of thought into establishing some tools to make our lives easier in this respect. And this is also what we talk about in the article.

**Q:** What is your personal experience of doing business in China – what are the unique challenges/surprises, if any?

**KL:** In a new environment people tend to spot first the differences. However, generally speaking there is not much difference in doing business in China, if you are dealing respectfully but firmly. People are similar in fact.

**HA:** I even observed some managers from the West that concentrate so much on dealing properly with some supposed differences that some of their Chinese counterparts perceive them as funny or even "fake". To avoid misunderstandings I would recommend to act like in any other business meeting in Germany.

**Q:** Any IP concerns?

**KL:** IP is always an issue and you have to try to sustain it inside the company. Patenting is a way to go, but will not help always. Establishing a unique structure, not easy to copy can also protect IP rights.

**HA:** It seems as Chinese authorities now really understood that protecting patent rights is inevitable to build a stronger base in high tech. There are some recent cases of radical prosecution of companies that violated patent rights. Nevertheless I feel that patenting is currently an option for large firms that have weight even on a political scale. For smaller companies it may take a while until patenting will be an effective means of IP protection.

**Q:** Could you say something general about the Chinese biotech industry? What are the most obvious weak points and the most positive factors there? Do you think that the biotech in China will take off? For example, the cost-intensive and time-consuming nature of biotech industry does NOT seem to fit the Chinese reality as long as people with money and connections can make profit faster elsewhere. Could you share your opinion here?

**HA:** For sure there is a lot going on in China. Business models are often production oriented and usually driven by the expectation of quick returns. This has to do with the investor environment. Most investors are willing to stay invested for 1-2 years, but they can hardly imagine to stay invested longer. This is certainly difficult for research-intensive companies. On the other hand I see a very active VC scene in China that is

really interested in dealing with new ventures. Nevertheless, I guess, they still have to learn how to deal with the biotech industry.

**KL:** After all the hope for "quick money" has also its positive side: companies are forced to establish contacts to the customers early. This will help them to understand the customer requirements, relationships are being established, and maybe complete failures become less likely.

**Q:** I was wondering whether there are Chinese pharmaceutical companies able to absorb innovation from biotech companies?

**HA:** By Western standards, Chinese pharmaceutical companies are just starting to develop new drugs. Although very strong in the Traditional Medicine field, the development of "Western" medicine is still very small.

**KL:** For the Chinese companies it will be decisive, how well they can integrate the huge international know-how into new business models and to leverage their knowledge for a mutual beneficial growth of the whole industry. Every success for a single company will support the success also for the other biotech companies in China.

**Q:** Do you think that China will have a viable biotech industry in the sense that there will be established companies along the entire value chain of the industry – from research-only to sustainable product companies?

**KL:** There are a couple of commercially successful ventures in the Pharmaceutical industry in China, be it new ventures or privatized former state run companies. To a large extent they play on the cost advantage. The question for the future is about innovativeness. Will these companies develop the capability to discover new drugs that will find their way into the profitable international markets? How can the creative potential of the people be leveraged in dealing with new frontiers in science and open new markets? It will take time and experience - experience you currently find in the biotech business in the US and Europe.

**Q:** Any networking, information or experience exchange among the biotech companies in Shanghai?

**KL:** Bicoll has organized some networking events with local companies already. What we do is we first screen companies around and then invite them for one-to-one talks covered by confidentiality agreements. These events are in essence for business development, to discuss possible collaborations or simply to build up a local network. Bicoll also makes sure that the people who come for exchange and networking are decision-makers in the companies.

Besides that there are also activities organized by local authorities. Due to the fact, that not all of these activities rely on English as the official conference language, it is

hard for all of the multinational members of the company to get integrated into the exchange process easily.

**Q:** What do you see as advantages for being one of the pioneering foreign biotech companies in China? Do you see unique opportunities for growth? Are these real possibilities, such as collaborating with Chinese pharmaceutical companies, getting financed by Chinese sources – bank/VC/private?

**KL:** There was no serious Chinese biotech venture capital company around ready to finance an international approach when Bicoll set up its Shanghai – Munich operations in 2001. There are some now; many though are state-backed.

**HA:** Our big asset now as we talk about financing our further expansion is our already achieved break-even. For other biotech companies in the US or Europe that would be hard to achieve. Due to the fact, that there is currently no experience in establishing, running and selling biotech companies, the Chinese VCs are looking for exit strategies in the 1-2 years range. There are some foreign VCs, such as from Singapore, or from some corporate venture funds, who are checking out opportunities.

**KL:** Bicoll has an advantage being the first Sino-German biotech in China: It is English-speaking, well-connected in Europe and in China and has already built the necessary process infrastructure to perform its collaborations on a top quality level. Of course, our success will make it easier for similar international set-ups and for the just started Chinese biotech companies.

**Q:** Biotech companies engaged in drug development and discovery have a symbiotic relationship with the big pharmaceutical companies here in the West.

**HA:** Well and I would say there is even a trend to relocate research activities from the Western countries into China. This is very frightening for the Western countries but it is starting on a large scale. For start-ups in China I see a big opportunity arising from this: In several years, a few international pharmaceutical companies will realize that they have missed the trend. And they will be looking for partners or acquisition candidates in China in about 5 years very desperately. From a financial point of view this will of course drive the prices for all small and medium sized companies that are operating according to international standards in China.