We are against GMO but we are OK with modified insulin

- an interview with Professor Florian RYSZKA, MD, PhD – owner of "Biochefa" – Pharmaceutical Research and Production Plant in Sosnowiec

Biochefa is a company operating in the broadly understood field of biotechnology, on the market of diet supplements and veterinary products. Your business is proof to the fact that it is possible to create a well-prospering company in the biotechnological field. When was the company established? Who was its originator and founder?

The company was registered in May, 1991. The idea behind it was created during the period of development of the Department of Applied Pharmacy and Drug Technology at the former Medical University of Silesia. Its creators included me and my colleagues, especially Prof. Barbara Dolińska, DPharm.

How did your business evolve? What did your customer offer include at the beginning and what has changed in recent years?

During the 12 years of working at the Institute of Organic Compounds Chemistry of the USSR Academy of Sciences, and later when working at the Institute of Blood Substitutes and Hormonal Products, created on my initiative, and also having close contacts with the pharmaceutical industry, including the production of hormones and biologicals (22 patents, 6 industrial implementations), the idea came up of creating my own company of a biotechnological profile. After returning to Poland (1979) we managed to do it but not until 1991. We started with registering and manufacturing products for the veterinary medicine – Biolactin (as the only company in the world) and Biorelina – as well as the medicinal product Cerosel. Then, for the needs of hematology, we developed Biodapol for treating soors. We adapted the product also for the needs of veterinary medicine (Biodapol-Wet). At the same time, we were working on a diet supplement technology. These were calcium (including calcium from chicken egg shells), magnesium, selenium, chromium, iodine and zinc products, as well as extracts from raisins and propolis (Flowinar) and from chokeberry (Arowinar).

However, our main goal is nanotechnology – application of low but effective doses of hormones and microelements for patient needs, including for organ transplants.

In your opinion, was the beginning of the '90s of the 20th century a good time to establish a company in the biotechnological branch? Was the fact that "service-oriented¨ biotechnology placed its first steps on the market helpful in starting such business? Or was the lack of blazed trails in the field a limiting factor?

Unfortunately, the beginning of the '90s was a "delayed start". We should have started in 1987 – 1988, i.e. in the period of Rakowski's reforms and minister Wilczek's industry.

Looking back on it years later – is Poland currently a good place to undertake activities in the biotechnological sector? What can be achieved in Poland in this field?

Florian RYSZKA – Prof., M.D., Ph.D., graduated from the Moscow Agricultural Academy (1957), in 1965 he received his Ph.D. (chemical science) and in 1982 M.D. In the years 1957÷1959 he was an assistant in the Department of Biochemistry at Warsaw University of Life Sciences – SGGW (WULS-SGGW); 1960÷1970 – Senior Assistant, Assistant Professor and then Associate Professor in the Institute of Natural Products Chemistry at the USSR Academy of Sciences. In the years 1971÷1979 he was a head of the Institute of Technology of Blood Substitutes and Hormonal Products in Moscow. Since 1980, associated with the Silesian Medical Academy (now Medical University of Silesia) – Department of Pathophysiology; a Head of the Department of Applied Pharmacy and Pharmaceutical Technology in Sosnowiec (Faculty of Pharmacy). Member and deputy chairman of the scientific and technical committee (Applications of hormones in the national economy) by National Committee the Science Council of Ministers of the USSR.

Author: more than 260 scientific publications on drug form technology, durability of drugs, drug pharmacokinetics, biopharmacy and isolation of hormones; author of 67 abstracts at national and international conferences, author of 50 developed and produced technologies and 40 national and international patents, 2 European applications, 28 patent applications RP; 13 trademarks.

Poland is a wonderful country because it has great potential of educated scientific staff. Unfortunately, development is inhibited by domestic and EU bureaucracy. A second significant inhibitor is the banking system; on the one hand, it is very inquisitive for innovators; on the other hand, it constantly suffers losses from big wheeler-dealers which results in very high interest rates on credits.

Your business is a scientific and production company. Generally, what is cooperation like between private biotechnological companies and the science world? How does it look like in your company?

I am a scientist myself and I educate my team in such a way so that developments are individual. As for the cooperation with the science world and the industry, it is developing in an excellent way. The only problem involves the "inhibitors".

In your opinion, what is the biggest problem when transferring biotechnology from the scientific – laboratory scale to the industrial scale?

There still remains the problem of technology parks which could serve as a "testing ground" for proceeding from the laboratory scale to industry. The problem is that as soon as they are created they are being "finished off" because they have to maintain themselves financially. No "child" is capable of earning a living from the very start.

Could you compare in general the Polish biotechnological market with that of Western Europe or the USA? What are the mechanisms of financing innovative research and products?

Biotechnology in the USA has very strong traditions and is developing very well. There is private capital available on the American market and the banks "feel" a good deal. Moreover, some new economic powers are developing very quickly – China, India, Brazil, Malaysia. They publish great works in the field of biotechnology and offer modern products. On the other hand, the European Union is sinking in bureaucracy. Germany is the only country that made significant progress.

How do you assess the possibilities of a biotechnology graduate on today's biotechnological market? Will a young, often inexperienced biotechnologist manage to establish and, most importantly, maintain a private biotechnological company on the market? What is needed the most? Knowledge, money, determination?

Lack of technology parks and proper orientation of studies, lack of bases at universities, low pay of didactic employees – all this forces them to take on many jobs at once and does not favor the development of young talents. At the same time, add to this the "inhibitors".

What is your opinion on the profile of today's biotechnology graduate? Who is more desired from the point of view of employers – graduates of universities of technology or regular universities?

I employ graduates of both the University of Technology as well as the University. Here, like everywhere else, the Gaussian bell curve is valid – the level of knowledge and skills is to a large extent an individual matter. I can only say that a lot of effort is required in "training" graduates coming from the Labor Office, regardless of their field of study.

Can you provide some tips and advice to students and graduates of biotechnology who are thinking of establishing their own biotechnological company?

1. First of all, you have to select your field of study carefully, taking into account your interests as well as labor market trends.
2. You have to specify earlier who you want to become and where you want to work in order to finish your studies and find you place in the selected field.
3. Do not try to undertake too many things at once and succumb to all of life's allure; otherwise, you will not find your place in the world once you have graduated.
4. Establish your own business while still studying.

To wrap up – what would you wish for Polish biotechnology?

For Polish biotechnology – the removal of "inhibitors", not only the external ones but also the dogmatic ones because, on the one hand, we are against GMO, but on the other hand we are OK with modified insulin.

Thank you for your time

an interview taken by *Anna Węgrzyn*
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Catalysis in Organic Synthesis (ICCOS 2012)

15 - 20 September 2012
Moscow, Russia, Europe

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- organocatalysis
- enantioselective catalysis
- catalytic activation and functionalization of organic molecules
- catalysis for green chemistry and sustainable development
- organometalic reagents and catalysis
- organometallic chemistry of transition metals, lanthanides, and main group elements
- mechanisms of catalytic reactions, theoretical and experimental studies, bonding and reactivity of catalytic species.

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