



## Stephan Emmerth

PhD | Senior Project Manager  
Biotech, Business Development  
Senior Manager BaseLaunch

Tel. +41 61 295 50 17

[stephan.emmerth@baselarea.swiss](mailto:stephan.emmerth@baselarea.swiss)

## REPORT LIFE SCIENCES



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# “I enjoy thinking about seemingly unsolvable problems”

Andreas Plückthun continues his research where others stop: 40 employees work in his laboratory on protein engineering. Their results form the basis for three biotech companies: Morphosys in Munich, as well as Molecular Partners and G7 Therapeutics (today Heptares Zurich) in Schlieren. At the Antibody Congress 2017 in Basel, Andreas Plückthun told us why he remains true to his research.

**Mr. Plückthun, you co-founded three biotech companies in three decades. How did this come about?**

There was always this curiosity in the beginning to discover something – but never the wish to found a company. After we produced artificial antibodies and learned how to mimic the immune system, we established the company Morphosys. Then the next question arose: can we do this with other protein molecules and solve new problems? Out of this emerged Designed Ankyrin Repeated Proteins (DARPs) and a second company, Molecular Partners in Schlieren. The next challenge was then to stabilize receptors by means of protein engineering in order to develop better drugs for these points of attack. Based on this research, we founded the third company, G7 Therapeutics.

**Who pushed ahead with the spin-offs each time?**

For the first company, it was my research colleagues. I was the more sceptical of us three at the time. The other two companies were traditional spin-offs of my doctoral and postdoctoral students.

How are the companies doing today?

Morphosys now has 430 employees and recently celebrated its 25th anniversary. We also received the first FDA approval for an antibody that is now available on the market. This is one of the few companies that is still doing exactly what we once wrote in the business plan, and successfully too. Molecular Partners has 130 employees, several Phase 2 and 3 studies, and, like Morphosys, is listed on the stock exchange. G7 Therapeutics was sold to the British company Heptares, which in turn belongs to the Japanese company Sosei. In short: all companies are doing well. I don't consider founding a company to be a particular achievement. The achievement is more that the companies are flourishing and bringing drugs to the market.

### **What changes have you noticed over the decades when it comes to founding a company?**

The climate has changed completely. It was totally against the grain in Europe 25 years ago to found a biotech company. That's why people went to California. At a symposium in America, I was once introduced as a researcher and a founder with the words; "He's like us." It was very common there for a long time to be both a researcher and an entrepreneur. That scepticism has since disappeared here, and founding a company is now judged positively. A venture capital scene has also developed since then. To be fair, I have to say that it helps investors if you've already successfully founded a company. The first deal is always the hardest.

### **You seem to be quite successful when it comes to founding companies. Did it ever tempt you to move to one of your companies?**

It was never a question for me to leave the university. It's an incredible privilege to be paid by the state to do crazy things. I always wanted to think about the next challenge at the university. Not having to account for quarterly profits is the only way forward in this context. In a company that conducts research with money from investors, you simply cannot undertake the type of risky and long-term projects that interest me. But I can say that thanks to the companies that are based on my research, I have repaid my dividends and created many jobs.

### **So you'll continue to devote yourself to basic research. Can this be steered towards commercialization at all?**

We've always wanted to solve a problem that seemed important enough to us. At some point in the research the question arises of how to use the results, what you can make of them. If we hadn't commercialized the results, the problems would have simply stopped at an interesting point. We would have stopped halfway along. This is comparable to a coming up with blueprint for a computer and then not building it. By founding the companies, we could ensure that the projects would continue.

### **Is there any collaboration with industry within the scope of your research?**

Direct collaboration between the pharmaceutical industry and our laboratory has never worked properly. Expectations and time horizons are very different. We develop new ideas and concepts that are often not exactly in keeping with large-scale pharmaceutical research. I don't think anyone will feel offended when I say that the pharmaceutical industry is very conservative. We do have many contacts but hardly any collaboration. That being said, our spin-offs work very well with the pharmaceutical industry.

### **Which topics would you like to focus on next?**

We are researching artificial viruses that cannot reproduce. The viruses should produce proteins directly in the body that are needed as therapeutic agents. This is so far away from practical implementation that such a project is only possible at a university. But I am absolutely convinced that it would have enormous significance

if it worked. I couldn't sit still if we didn't at least try. We are once again trying to solve a problem in my laboratory that most people in the field would consider impossible to solve. That's what makes me get up in the morning. I want to show how it works.

**Learn more about Andreas Plückthun between basic research and biotech entrepreneurship [at our event on 24 April 2018.](#)**

### About

Andreas Plückthun (\*1956) is a scientist whose research is focused on the field of protein engineering. He is the director of the department of biochemistry at the University of Zurich. Andreas Plückthun was appointed to the faculty of the University of Zurich as a Full Professor of biochemistry in 1993. Plückthun was group leader at the Max Planck Institute of Biochemistry, Germany (1985-1993). He was elected to the European Molecular Biology Organization (EMBO) in 1992, and named a member of the German National Academy of Science (Leopoldina) in 2003. He is cofounder of the biotechnology companies Morphosys (Martinsried, Germany), Molecular Partners AG (Zürich-Schlieren, Switzerland) and G7 Therapeutics (Zürich-Schlieren, Switzerland).

*Interview: Annett Altvater and Stephan Emmerth, BaselArea.swiss*

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**BaselArea.swiss**

Dufourstrasse 11, 4010  
Basel, Switzerland  
T +41 61 295 50 00  
info@baselarea.swiss

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