

# Meet Carolina Trkulja, Fluicell's new CEO



On October 3, Fluicell announced that the company is focusing its operations on accelerating activities in tissue-based research products, regenerative medicine and advanced therapies for the treatment of type 1 diabetes. At the same time, it was announced that Carolina Trkulja, former Chief Innovation Officer, takes over the role as CEO of Fluicell. We have spoken to Carolina to get to know her better and hear her view on Fluicell's way forward.

**There are many who are curious about who you are and what your path to the role of CEO of Fluicell has looked like. Please tell us a little about your background.**

I started my career as a researcher by doing a PhD in biophysical chemistry at Chalmers University of Technology, where I investigated the structure and function of proteins. During my time there, my supervisor and I invented a completely new technique for producing therapeutic antibodies. These discoveries led us to start Oblique Therapeutics together in 2015, with the vision of being able to make a difference for the patients who currently lack effective treatments.

What we focused on were diseases where there were no adequate treatment options and where it would not have been possible to address the disease-related target proteins with antibodies. In many ways, we were first in many situations and had to develop new techniques and approaches to solve the problems.

**What experiences from working with Oblique Therapeutics do you bring to Fluicell?**

There is a clear parallel between how we at Oblique were pioneers in an area where there really wasn't any previous technology to

start from and Fluicell's way of redefining what bioprinting is and how the technology can be used to construct tissues with high detail.

Other important experiences that I also bring with me are to drive drug development through the preclinical phase and to combine company building with medical research. There I have valuable knowledge that can be applied to the journey that Fluicell is going through right now.

**What are your main driving forces?**

A major driving force for me is to be able to do something that makes a difference for patients; that the research we conduct and the products we develop in a tangible way can lead to better health. Growing Fluicell and making our technologies more impactful is a very concrete way to achieve that goal.

I also have a great interest in science and I am driven by understanding more about human biology and how the human body works. To have the opportunity to combine these two perspectives in your work, that's when it becomes really exciting.

**In connection with your appointment as CEO, Fluicell also announced a restructuring of the company with a sharper business focus. Can you tell us a little bit about what this shift in focus means?**

Omstruktureringen är på många sätt kulmen av en utveckling som iThe restructuring is in many ways the culmination of a development that began already in connection with the launch of Biopixlar, where Fluicell saw the long-term potential in providing bioprinted tissues as a product. Projects in regenerative medicine

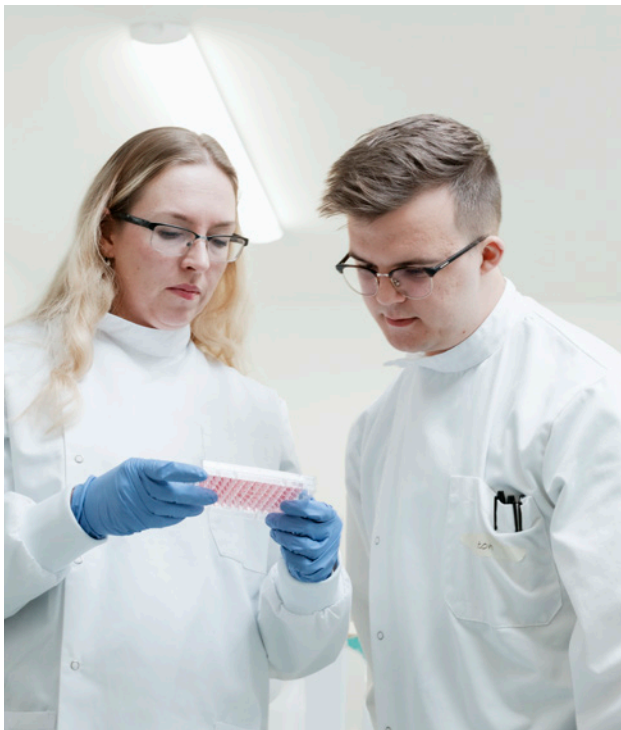


began in earnest in 2021 and we are now in a position where we see that we have enough data to be able to take the step to focus solely on medical development. We feel that we are in a position where we have strong proof-of-concept for both tissue-based therapy products, but also for screening models.

Early on, we identified the significant growth potential that exists in these markets and the value of the technology in these contexts. With a new direction, we are better positioned to address these markets and realize the potential of our technology.

### **How would you describe Fluicell's offering to the market?**

Many biotech companies of Fluicell's size that develop drugs are limited to a single target or a specific disease, which entails a high level of risk if the program fails. Instead, Fluicell has what is usually referred to as a platform technology. This means that you have an underlying technology that enables your drug development, but which can also be applied to a large number of other therapeutic areas.



The fact that we have a unique platform that can be applied to many disease areas is the basis of our offering and creates potential for further growth. In the immediate future, we will focus on driving the diabetes program forward, while at the same time producing valuable data to be able to attract partners in other therapeutic areas as well. The goal of our long-term strategy is to find and drive collaborations with pharmaceutical companies to be able to bring tissue-based therapies to patients faster.

Not only do we have the opportunity to produce pure therapies, such as those for diabetes, but we can also provide our tissues for use in drug function and safety screening. On a technical level, the platform is not limited to a particular type of tissue or a particular

type of cells, but a very multi-capable technique with a focus on detailed functional tissues.

A significant issue for the pharmaceutical industry is that as many as 90 percent of all drug candidates that reach the clinical phase fail, which is a major contributing factor behind increasing drug costs. Therefore, there is a huge need in many areas to find accurate models with better translational value that can be implemented early in the flow and thus lead to cost savings later in the process.

In summary, it can be said that our development programs in areas such as diabetes have great value in themselves, but that they also serve an important function to showcase what the platform can deliver and thereby attract other collaborations.

### **What is important for Fluicell to be able to create collaborations and partnerships with pharmaceutical companies?**

There are a number of technical parameters that are crucial to establishing partnerships. In the first instance, it is a matter of demonstrating good efficacy and safety in sufficient detail. Beyond that, it's about showing how our technology differs from the competition and convincingly demonstrate why our technology is better. We have received very good feedback from discussions with pharmaceutical companies and we know what it is we need to do to hopefully go all the way. What is extremely interesting in this area is that there are several examples of large agreements that have been entered into early in drug development and that it is not critical that clinical development has been reached.

### **If we go into the diabetes program, what is the driving force behind that?**

To answer that question, I think we should start explaining how diabetes is treated today. Diabetic patients use insulin injections to regulate their blood sugar levels, which in many ways is a great treatment. However, it is very difficult to dose correctly. These patients must constantly monitor their blood sugar and try to estimate how much insulin they should take so that their blood sugar is neither too high nor too low. It is also common for them to have episodes in one direction or the other, which can cause a lot of damage to the body. Add to that having to live with constant worry and continuously having to check and plan when and how to take your insulin.

The reason why diabetic patients need insulin is found in the pancreas, where there are cell groups called islets. These islets produce insulin, but also a number of other hormones, which together are responsible for regulating blood sugar. When you have type 1 diabetes, the immune system attacks these islets, causing them to be destroyed and thereby removing the ability to produce insulin.

An alternative to insulin injections is to replace the islets themselves, something that has been tried to be done by transplanting islets from donors. This has yielded such good results that these patients usually do not need to take insulin for a long time to come. The problem is that there are far too few donors.



It is possible to help about 100 patients internationally each year, which should be compared to the 9 million people who currently live with type 1 diabetes, a figure that is expected to increase to 15 million by 2040.

We and several others are therefore working on producing synthetic or artificial islets that can be produced on a large scale and transplanted into a large number of patients. The first generation of grafts will probably have an effective lifespan of months to years. But the more you learn, the more you will be able to extend the time horizon. But even in the short term, you can offer great benefits to the patient.

The ultimate goal is, of course, to be able to create a transplant that will last a lifetime.

### **What makes Fluicell's therapeutic concept unique?**

Ultimately, it is important that these islets produce enough insulin and other hormones required to precisely regulate blood sugar, and that they survive once transplanted. It is known that things like the composition of cells in the islets, how large they are, what shape they have and how close they are to each other have a big impact on how much insulin they can release and how long they can survive.

And this is exactly where Fluicell's technology comes in. Because we have the technology to construct these islets at the cellular level, we can decide what composition of cell types they should have, exactly how large they should be and how close to their neighbors they should be. If it is advantageous for them to have a special shape – perhaps they should be oblong, round or flat – then that is also something we also can control. These are some of the parameters that we can control today and that we believe will be critical in order to be able to deliver a product in the end that provides sufficient insulin release over a long period of time and that we believe is unique with our technology.

We are also not limited by nature, we can make any shape or composition we want. There we also have a potential advantage over donated material that has a very predetermined shape and structure that cannot be influenced.

### **Finally, what are you most looking forward to in your role as CEO and for Fluicell?**

I see a lot of potential in our technology, and I think we have only scratched the surface of what it can achieve. I look forward to working for a broad acceptance of our technology in the pharmaceutical industry in order to expand our pipeline with new therapeutic areas and collaborations, with the goal of ultimately being able to make a big difference for patients with severe disease.