



Express to solid tumours

TILT BIOTHERAPEUTICS Solid tumours have long resisted cellular immunotherapy-based treatment attempts. A Finnish oncologist feels certain he has found a way to get to the heart of the cancer. He founded Tilt Biotherapeutics to ensure his oncolytic virus therapy gets to the patient in record time.

“Immunotherapy can work, and it will work. I have seen it work in patients, and I am certain of it,” Akseli Hemminki states. If it was up to him, his technology would be available to patients tomorrow, and not a day too soon. Three years ago, the professor of oncology founded Tilt, and its lead product, an oncolytic virus, has made rapid progress towards the clinic. The first clinical trials are scheduled for 2017. “For me, this seems very, very slow,” Hemminki admits.

The scientific rationale for the founding of Tilt Biotherapeutics Ltd had been growing for years, Hemminki explains. In an advanced therapy access programme, he had already treated more than 200 patients, and he saw that oncolytic viruses had the potential to enable successful T-cell therapy. Hemminki subsequently armed an oncolytic adenovirus with immunostimulatory cytokines interleukin 2 (IL-2) and Tumour Necrosis Factor alpha (TNF α). In several studies (doi: 10.1371/journal.pone.0131242, 10.1158/2326-6066), he and his team from Helsinki University’s Gene Cancer Group showed that this technology could do something other immunotherapy approaches could not: make T-cells fight solid tumours. It



AKSELI HEMMINKI
Tilt Biotherapeutics, CEO

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! We will cure cancer, plain and simple.

combines oncolysis with TNF α and IL-2 to remove the tumour’s ability to suppress an immune response and activate T-cells locally. The virus is injected directly into the tumour, where it replicates resulting in systemic effects. This oncolytic virus became the first product of Tilt, TILT-123. “The outcome we had observed in patients treated with oncolytic viruses was so compelling that a new company was the logical next step.”

Full speed ahead

It was not the first company Hemminki launched. Back in 2008, he was one of the founders of Oncos, another developer of oncolytic viruses created as part of his research at Helsinki University. Sev-

en years later, Oncos merged with Norwegian Targovax. Most would consider Oncos a success story, yet Hemminki was not entirely satisfied. “In 2008, I was happy to advise and be CSO, but in 2013, I wanted to see if my own vision worked.” Key to his vision was to have the patient at the centre of the research – thus his impatience to get products to the market fast. And so, Tilt Biotherapeutics was born, Hemminki at the helm, CEO and CSO rolled into one.

The start was all but easy. Initial financial support came from Hemminki himself, friends and family. There is hardly any venture capital available for Finnish biotech, Hemminki explains. One of the few VCs that do invest in life sciences in this region, Lifeline Ventures, eventually came onboard. Tilt has managed to raise around €4m, from Lifeline Ventures, Business Angels, EU grants, and the Finnish government’s funding agency TEKES.

Hemminki, who plays bass guitar in his spare time and loves to exercise, says he has always been passionate about his research. But even his dedication has bounds, he found. “Over the last year, everything has been happening quite rapidly.” The last six months saw additions to the Tilt team every other month or so. “It is a good thing that I am not a micro-manager,” he grins. “Instead, I try to get people excited about their work. And it is working well – I have a great team!”

Oncolytic viruses are a hot topic in immuno-oncology, Hemminki knows. But he does not fear the competition. “There are not many companies out there with our scientific background and experience from human patients,” he says. “Our position in this field is unique.” ■

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Picture: Tilt Biotherapeutics



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