Alert! This Protein Could Be Causing Breast Cancer

Breast cancer needs no introduction.

The statistics are shocking. Globally, it will ultimately affect nearly one in eight women – that's a quarter of all female invasive cancers. In total, it kills approximately half a million people a year – including many men. In the UK alone, 40,000 women are diagnosed annually.

Today, I'm talking to Scott Robinson, chief science officer of MicroQuin. It's a small firm, with big ideas.

In fact, it may have found the key to breast cancer.

It's potentially very big news – and I'll let Scott fill you in.

AL: What is MicroQuin?

SR: MicroQuin is a biotechnology and R%26D-based startup founded in 2016. The firm primarily focuses on cancer treatment. MicroQuin's technology is based on modulating a recently discovered target protein. This is essential in tumour formation, and cancer cell survival.

AL: What stage is MicroQuin at?

SR: MicroQuin is raising capital to progress its peptide-based, breast cancer compounds to clinical trials within the next 2-3 years. Animal models have shown that its compounds kill 100% of breast cancer cells – with no observed side-effects, and only a 4-10 day treatment window.

AL: How did you get to work in such an exciting area?

SR: I started life studying biology, but it was not for me, so I dropped out. After spending a couple of years finding myself whilst holding down a full-time job, I started volunteering after work at the Centre for Infectious Diseases at Durham University. I always loved knowing how microbes interacted with humans to cause disease, so this seemed a good idea. I fell in love with the science behind it and knew then I had to go back to university, but this time to do what fascinated me. In my undergraduate years, the University of Bristol certainly kept me on my toes and really pushed me past my limits. It was their training that led me to get multiple offers from different universities to study for my PhD, all of which I got from recommendation and not by applying. It was only Imperial College to which I applied – and I wanted to go nowhere else. Upon securing an offer from Imperial I knew I wanted to make it big. In my first year I used to go around saying I wanted to get a *Nature* paper before my PhD ended. After three years of intensive work and some excellent publications I achieved everything I said I would. Now, I'm regarded as an expert on understanding cell survival and how bacteria manipulate this to propagate disease. Furthermore, I got that *Nature* paper!

None of this was easy; it required me to work extremely hard. During my PhD I was spending an average of 84-90 hours a week in the lab. It wasn't until some experiments failed to work that I got some spare time on my hands – and I started thinking about other things outside my PhD topic. It was those thoughts that led me to discover a treatment for breast cancer.

AL: Tell me about the rest of your team.

SR: My co-founders are Wei Luo and Leah Ensell. Wei is my closest friend. He is a chartered financial analyst, and McKinsey consulting-trained. He is exceptional at financial and business strategy, and scaling up new businesses. Leah and I have worked together before, but she is currently working at the University of Central London's Cancer Institute, until we get our new laboratory established. For the Cancer Institute, Leah is key in taking prospective drug candidates through the drug discovery process to gain drug approval. No one could have asked for a better duo to start such a business with.

AL: How big is the breast cancer drug market?

SR: There were 1.9 million new cases of breast cancer in 2012, and this number is expected to double by 2032. The total global

spend on breast cancer in 2014 was conservatively estimated to be around $127 billion, with some figures estimating up to $800bn globally. Spend on drugs alone was very conservatively estimated at around $14 billion, and is expected to reach $17 billion by 2020.

If our drug works in humans the way it does in animal models, we can shake up the market overnight.

AL: Can you tell me about the current treatment options?

SR: There are a few different types of breast cancers, and at the moment they require different types of treatment. This requires therapy to be determined on a patient-by-patient basis. Once the type of cancer has been ascertained, an appropriate course of treatment needs to be determined. Aside from first-line surgery, and radiotherapies, there is a range of therapeutics (ie, chemo) to choose from. Irrespective of what treatment is deemed most appropriate, the results are often devastating – with severe side-effects. Furthermore, existing treatments are not very efficacious. They require multiple rounds with no guarantees.

AL: How is MicroQuin different from what is currently available?

SR: MicroQuin identified an integral target, common across all breast cancers. We developed five compounds that manipulate this target, to universally kill all breast cancer types. This works within a 4-10 day treatment window in mice, to the point of the cancer being eradicated in the host.

In addition, we developed and utilised a highly specific targeting sequence in our compounds, which is exclusively uptaken by breast cancer cells. That means they're much less likely to cause side-effects, by stopping them from acting elsewhere in the .

As such, MicroQuin's genotype-blind therapy could considerably improve the quality of life of breast cancer patients. It could simplify treatment options; and eradicate the need for therapeutics with excessively harmful side-effects.

However, MicroQuin doesn't stop there. We have a pipeline that includes three other diseases. Furthermore, we observed that our drugs in their current forms have various degrees of efficacy in treating other cancers. Our lung cancer work has shown our compounds induce 30% of lung cancer cell death within 96 hours. Once we are into clinical trials with breast cancer, lung is next.

AL: How much is MicroQuin raising and how much progress has the firm made?

SR: We are looking to raise £2 million, to compliment the £250,000 committed by the co-founders. This will get our breast cancer drugs into clinical trials in 2-3 years. As part of this, we're applying for grants, and pitching to venture capitalists and angel investors. Since our round opened in January 2017, we have progressed to the non-disclosure agreement stage with 5 VCs. We're also continuing discussions with other VCs, contract research organisations, and prospective angel investors. We're also assessing offers of collaboration and one offer of licensing. There is a lot going on and in a very short timeframe.

AL: How do you plan to spend the money?

SR: The money will be spent on research and development, and pre-CTA studies (clinical trial application) over the next 2-3 years. R%26D will also partly involve screening a wide variety of cancers. That's because our compounds have been shown to work in treating other cancers too – albeit with varying degrees of efficacy.

If MicroQuin lives up to its promise, it could be one of the most impactful firms we've ever featured. We'd love to know your thoughts: andrew@southbankresearch.com.

Best,

Andrew Lockley
Exponential Investor