Interview: Luis Almeida, CEO, Luzitin, Portugal

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Luis Almeida, CEO of Luzitin Portugal, talks about the Innovation of the Decade award Luzitin received for its patented technology, what exactly is so unique and innovative about this technology, and how it could spark a paradigm shift in the way cancer is treated.

Luzitin won the Innovation of the Decade award for its patented technology. What impact did this award have on the company's business?

In practical terms, the impact was not so big. It certainly increased public awareness about Luzitin and the self-esteem of our collaborators with such recognition. It is something that makes us proud.

What is so innovative about this technology, and what patient groups does it target?

This technology focuses on photodynamic therapy of cancer. It has potential for the treatment of solid tumors that can be accessed by light directly or by means of optic fibers inserted through an endoscope, which allows us to only affect the target tissue where we want to act without systemic adverse effects. As cancer treatment is usually very toxic, this technology activates the drug through a light of a specific wavelength to target cancerous cells only.

This technology is being developed in Portugal, a country bolstering its reputation as a hub for drug development. How can Luzitin help demonstrate that?

Luzitin is a spin-off from the University of Coimbra, and most of our scientists came from the University. In total we are 18 collaborators; half are full-time employees and the other half have additional assignments at the University, where our lab is located. Luzitin can benefit from academic talent and knowledge, which is very important for startup companies to succeed. Portugal's youth is very qualified; many PhDs are available at a fair cost, making us competitive.

Is the environment in Portugal conducive to successful technology transfer?

This is something that we cannot create overnight. It takes time. We are making progress however, and I am very optimistic because there are several companies in Portugal now helping spin-offs, like Bluepharma with Luzitin. Established companies help young startups to move in the right direction and give them some financial stability.

Luzitin is owned by Bluepharma, Portugal Ventures and its inventors. Are there ways in which companies like Luzitin can promote itself across Europe?

We believe we can find the right niches for businesses to succeed, particularly in an era of personalized medicine and small indications. A small indication does not necessarily imply a small business, especially for a company like Luzitin. In strategic terms, we want to go to POC phase II studies in humans and then license the technology to companies with more marketing and financial capacity to complete clinical development. Our most advanced project, an advanced cancer indication, is currently in Phase II with the approval process of its studies being completed now, and we will start patient recruitment soon. In the pipeline we have other related technologies in photodynamic therapy and photodiagnosis.

What makes Luzitin the partner of choice?

Photodynamic therapy is not completely new. There are a couple of products available such as Photofrin and Foscan, but these compounds remain in the body for a few weeks after treatment and can be activated just by sunlight, with subsequent risk of skin phototoxicity. On the other hand, the time gap required between drug administration and activation in target tissue lasts three or four days, making the treatment complex and inconvenient. With our technology, the drug is activated within 15 to 30 minutes after administration. According to non-clinical data there is no problem with exposure to normal light shortly after treatment, since the period of phototoxicity risk is very short due to the short life of the drug in the body and because it is activated by a completely different light wavelength. Thus, Luzitin has very promising technology, which is why we were awarded with the INVENTA prize. We have established several contacts and many companies are waiting for our POC results in patients to move to more detailed negotiations.

The global market for photodynamic therapy is estimated to reach $2.6 billion in 2014. What slice of the pie are you expecting to get from that?

It is too early to say, because the photodynamic therapy sector also involves noncancerous, precancerous and skin indications. Our most advanced technology does not address such indications, although our pipeline products will. POC results will determine our expectations of the market. There is a population of advanced cancer patients who can benefit from this new technology, since at one point those patients are declared untreatable because they have already experienced chemotherapy and radiotherapy. They are also not indicated for surgery, so their needs are not answered. Luzitin's product could be the answer for such a population in the first step, and then we will move to early cancer. But we will start with the most advanced cases, because according to current guidelines, clinical development for such indications can be expedited to have fast track.

In that sense, this technology could be a real game-changer. Can Luzitin create a paradigm shift in the way we perceive cancer treatments today?

We believe we can have the conditions for that as the technology showed very promising results in non-clinical models.

Where will you sell this technology?

The plan for our most advanced project is to license it to a big player and let them continue because we are not in the conditions to play the global market. We have to focus on what we do best, and we are not prepared for direct marketing.

What attracted you to Luzitin in the first place?

I am very enthusiastic about my country's future in this field. Especially in the last decade, the Portuguese scientific system developed a lot and I strongly believe that there is a huge potential for translational research with a view to the subsequent marketing. Luzitin, that is a University of Coimbra's spin-off, is a great demonstration of that potential and I am very proud to contribute. Additionally, the technology's ability to target tumors is very appealing. Furthermore, recent changes in regulation allow for performing expedited clinical and non-clinical developments for projects fulfilling unmet medical needs, meaning the time from patent to market can be as little as six or seven years, which is the case of Luzitin!

I am also involved in other projects aiming to help my country, and to contribute to develop skills and capacities in clinical research. I created a pharmaceutical medicine course at the University of

Aveiro in 2009, and three years later it was awarded as a center of excellence by Pharmatrain. We prepare and help about 30 students per year to develop clinical research in Portugal by training and updating the qualifications of people working in that research field. In general, if we improve clinical research conditions in Portugal, especially those related to POC, we will add value to translational medicine we want to do here. To stay only at the non-clinical phase and try to license after performing studies in animals is not enough to change. After POC, negotiations are more likely to succeed.

Portugal only has 10 million people, but the clinical research activity of similarly sized countries like Belgium and Austria is much greater. This is because most of Portugal used to be out of the clinical research arena. Having worked with clinical trials in 35 countries, I can assure you Portugal has the conditions to be very competitive. We have very well equipped hospitals and our doctors and nurses are extremely qualified. When they go abroad to work in hospitals or to do their PhDs, they are always recognized as being outstanding. The recent creation of a network of hospitals and primary care centers, called “Blueclinical Clinical Research Partnership”, will increase efficiency as well. Even for sponsors coming from abroad, they will only have a single point of contact for multiple institutions; having the entire network organized with the same quality system, standards and certified investigators, will allow sponsors to save time and money. We need to act as a single cooperative body, bearing in mind that all stakeholders need to have their interests duly represented: patients, investigators, institutions, sponsors, and society, represented by our authorities, with whom we must also partner to achieve a global commitment. I think that the crisis created a favorable environment for that because people now are more prone to accepting the change and to taking risks to partner, creating win-win situations.

What does Portugal need to do to become truly competitive?

Portugal is experiencing a crisis, but this opens opportunities, even for entrepreneurs from abroad to invest in the country. Portugal wants to attract investments in the scientific area, and we are prepared for that. The authorities are trying to shorten approval times, and are very prone to accepting direct interactions, discussions and scientific advice in order to create a friendly R&D environment. Long approval times used to be one of our weaknesses, but currently both the ethics and regulatory agencies and hospital boards approve within a month, sometimes even less. We are moving in the right direction to be competitive in Europe. External foreign investment is also crucial to development over the next decade.

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