

'Indian private investors extremely risk averse'

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She received her Bachelor's degree from Stanford University and PhD from Rockefeller University. She was a postdoctoral fellow at the Harvard School of Public Health in Infectious diseases.

Prior to Vitas, Dr Rangarajan was a scientist in the drug discovery division of Dr Reddy's Laboratories.

In her exclusive interview to *BioSpectrum's Raj Gunashekar*, she emphasizes that, as of now, Vitas' focus will mainly be on infectious diseases. She adds that for an entrepreneur, it is important to have clarity before establishing an enterprise.

In the field of new drug discovery for antibiotics, there are only a handful of companies worldwide. Dr Radha quotes this as Vitas Pharma's USP. She observes that in the West, investment in Biotechnology is considered as an essential component of growth.

With its operations kick-starting in 2011, Vitas Pharma is a drug discovery and development company, involved in identifying and developing next-generation antibiotics to treat multi-drug resistant hospital acquired infections.

The company's management team consists of Dr Radha Rangarajan and Dr Rajinder Kumar, co-founder, serving as the chief medical officer of the company.

Drug resistant infections are on the rise all over the world today. "In the United States, 70 percent of the bacteria causing infections in the hospital are resistant to at least one class of antibiotics. In fact, the World Health Organization (WHO) now cites antimicrobial resistance as one of three greatest threats to human health. Given the current levels of drug resistance and their widespread occurrence globally, drugs that overcome resistance and offer significant clinical benefit are urgently needed. This is the focus of the research at Vitas Pharma," opines Dr Radha.

According to Centre for Disease Control (CDC), multidrug resistant bacteria are responsible for 2 million illnesses, resulting in 23,000 deaths, and costs the healthcare USD 26 billion in the United States alone.

The Vitas portfolio currently includes compounds for bacterial infections such as hospital acquired pneumonia, complicated urinary tract infections, blood stream infections and complicated skin and soft tissue infections.

Adds Dr Radha, "These compounds target vital metabolic functions in the cell, and are novel, thus overcoming drug resistance. We have filed three patents till date. The most advanced project is at a lead optimized stage and is intended for the treatment of complicated skin infections and hospital acquired pneumonia caused by Methicillin-Resistant *Staphylococcus Aureus* (MRSA). The other three projects are at different stages of preclinical development from hit to lead."

In a 2007 survey of 1,293 hospitals by the European Antibiotic Resistance Surveillance System, Methicillin-Resistant *Staphylococcus Aureus* was responsible for 25 percent of the infections and required an excess of USD 63 million in spend, due to longer hospital stays. A recent Indian Intensive Care Case Mix and Practice Patterns study (INDICAPS) of 4,209 ICU patients found that one out of every eight patients in India die from infections contracted in ICUs.

Vitas is currently self-funded by the founders themselves, along with other grants. "We are a R&D driven product company. Our business model is to out-license our molecules after achieving proof-of-concept in the target population. Therefore, our 'customers' are mid-to-large pharmaceutical companies with expertise in clinical development and regulatory, with sales and marketing capabilities in the major markets," explains Dr Radha.

Talking about the initial challenges faced while erecting Vitas Pharma, Dr Radha comments, "The initial challenges of setting up a company were largely centered on finding the right Incubator and people with the relevant experience, and identifying vendors and service providers, who could cater to our needs at our pace."

Dr Radha believes that before one sets out to establish a company, it is essential for the entrepreneur to have clarity. "Clarity in terms of what the unmet needs are, how the product of the company will meet those needs, and analyzing its market potential is crucial. Of course, it is also important to ensure that funds available to the company are adequate to build the product," she says.

At the moment, Vitas has a total of four products, which are at different stages of preclinical development, from hit to optimized lead.

"All these products are intended for treating multi-drug resistant infections such as hospital acquired pneumonia, complicated urinary tract infections, skin and soft tissue infections, and blood stream infections. What is novel about the Vitas pipeline is that the compounds represent completely new chemical structures and hence, are able to overcome multi-drug resistance," elucidates Dr Radha.

At Vitas, the team consists of scientists with Master's or PhD degrees, in chemistry or biology, with relevant industry or academic experience.

When asked about Vitas' unique work culture, Dr Radha says, "At Vitas, all the team members are encouraged to think and find innovative solutions to technological challenges and scientific questions. Everyone is encouraged to propose new project ideas and pursue initial feasibility experiments, so long as the idea is aligned with the company's interests. We constantly discuss the latest in science and technology informally over lunch or in meetings, thus creating an environment conducive to research and original thinking."

"In the field of new drug discovery for antibiotics, there are only a handful of companies worldwide. We have the distinction of being one of them," she further adds.

Dr Radha feels that, Indian private investors are extremely risk averse. "Their appetite for investment in R&D driven biotech companies are low. This is in contrast to other parts of the world such as the Silicon Valley or Boston, where investment in Biotechnology is considered an essential component of the growth story," opines Dr Radha.

With that contrast in mind, she emphasizes that, in India the government needs to take the role in creating an ecosystem for R&D driven companies to thrive. "This includes creating capital for start-ups, establishing Incubators, accelerators and putting in place policies that are small-company-friendly and tax incentives to promote private investment in R&D," she comments.

Speaking on the public-private partnerships, Dr Radha observes, "Vitas was incubated in the University of Hyderabad and the IKP Knowledge Park. We work with academic institutions and public hospitals. We receive funding through two schemes of BIRAC. Thus, our operational model is based heavily on the public-private partnership model."

At the moment, Vitas Pharma is collaborating with both academia and industry. "We have an ongoing collaboration with, Dr Harinath Chakrapani at Indian Institute of Science Education and Research (IISER), Pune; Dr Sharon Peacock, University of Cambridge, UK; Dr D Balasubramanian, L V Prasad Eye Institute; Dr V Lakshmi, Nizam's Institute of Medical Sciences; and Syngene (Biocon group of companies). We have also had past collaborations with the faculty at the University of Hyderabad," Dr Radha says.

In the future, Dr Radha sees Vitas entering the clinical development phase with its assets, and successfully out-licensing and building partnerships with other pharmaceutical companies.

"Our focus will remain on infectious diseases, although we may expand our scope to include anti-virals and anti-parasitics in the future. Pain and inflammation is another area that we might venture into. We will continue to progress with our four preclinical programs this year. We hope to file one IND this year," ends Dr Radha with a lot of hope.