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ASIA EDITION

Affordable cancer diagnostics wins VolitionRx BioSpectrum award

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Affordable cancer diagnostics wins VolitionRx BioSpectrum Asia Pacific Emerging Company of the Year 2013award

Driven by the demand for affordable and simple diagnostics, VolitionRx has been focusing on diagnostic tests for cancer that are as simple and easy-to-use as the diabetes and cholesterol tests of today.

The Singapore-based company, which draws the first part of its name from the word 'volition' that means the faculty or power of using one's will, is committed to making blood tests for cancer non-invasive, while also ensuring that they are accurate, affordable and scalable. Its NuQ suite of products is a successful step towards fulfilling this goal.

About five years ago, the company's two chief scientific officers, Dr Jake Micallef and Dr Mark Eccleston, pulled together a package of intellectual property (IP) around the use of nucleosomes, the basic unit of DNA packaging, as a diagnostic while working with a small AIM-listed therapeutics company. Recalling the genesis of the company, Mr Cameron Reynolds, CEO, VolitionRx, says, "We established Volition in 2009, putting together the funding to give this exciting package of IP and the scientists an independent focus and home."

The company, which has its research laboratory in Belgium, chose Singapore as its base because of various reasons. "We were attracted to Singapore for its competitive, entrepreneurial tax regime and its strong support for life sciences," points out Mr Reynolds. The chair of the company's scientific board, Dr Alan Colman, who is based at A*Star in Singapore also motivated the founders to have the base in Singapore.

Talking about the funding for the company, Mr Reynolds says, "Much of our early funding came from entrepreneurial investors and small private funds who invested about $4.35 million. We were also awarded a very generous funding of over $1.3 million (one million euros) by the Walloon regional government in Belgium."

The lab facilities and office at Namur, Belgium, became operational in March 2011. In September of the same year, the company filed for three patents for NuQ, NuQ-X and NuQ-V families of tests. In July 2012, the company signed an agreement

with Stefan Holdenrieder of Rheinische Friedrich-Wilhelms-UniversitÃ¤t at Bonn, Germany, for three clinical trials.

The research kits were launched in December 2012. VolitionRx, which expects to set up an office in the US in 2013, is initially targeting researchers for the sale of its kits. Presently, it is manufacturing the kits in Belgium, but plans to outsource production when the demand rises. The company has commenced a large internal clinical study for its Nucleosomics diagnostic products at its own laboratory. "We plan to commence a number of larger trials in the first half of the year for several new cancers," says Mr Reynolds, adding that the company is in discussions with big diagnostic companies regarding possible licensing of their products.

The technology

VolitionRx has developed a range of immunoassays based on the company's proprietary technology Nucleosomics, an epigenetic profiling platform for the detection of histone variants and post-translational modifications as well as DNA modifications in intact nucleosomes. The technology was acquired through the acquisition of ValiBio SA by VolitionRx for $1 million. HyperGenomics, which uses existing biopsy techniques to identify specific cancers through analysis of hypersensitive sites in cells, was the other technology acquired through this deal.

Nucleosomics allows profiling of nucleosomes through a liquid biopsy (of serum, plasma or other biofluids) in a standard ELISA format. The tests are a simple double-antibody ELISA that captures and labels nucleosomes in a sample. The company is primarily focused on using blood samples as it allows disease detection without an invasive surgery.

The Nucleosomics technology involves identification and measurement of a number of nucleosomes structures with almost innumerable potential combinations, and is therefore an entire platform. "As far as we're aware, we are the only company working on nucleosomes in blood, and our broad patents and applications reflect that," says Mr Reynolds. The company has developed a range of 15 immunoassays for the detection and analysis of nucleosome structures that was launched in December 2012. The price ranges from $1,060 to $1,330 (EUR799-EUR 999) for a 96-well plate kit. "Concurrently, the major market for our tests is their clinical use in oncology and other conditions such as endometriosis," explains Mr Reynolds.