



MEDIA RELEASE | FOR IMMEDIATE RELEASE

Singapore, 2 March 2010

Total: 5 pages (including notes to editor)

Rhapsody Biologics secures exclusive licence from Exploit Technologies to create a unique and versatile Personalised Peptide Vaccine (PPV) platform

The new PPV platform is highly accurate in predicting and optimising peptide vaccines, and is set to reduce cycle development time for pharmaceutical companies, while greatly improve the odds of delivering a successful and effective vaccine.

Singapore, 2 March 2010 – Rhapsody Biologics (S) Pte Ltd, a Singapore start-up, had on 2 March 2010 licensed from Exploit Technologies a portfolio of technologies that has gone into the creation a versatile Personalised Peptide Vaccine (PPV) platform to predict and optimise peptide vaccines for use at an individual and population level. The portfolio of technologies is developed by Prof Ren Ee Chee at the Singapore Immunology Network (SIgN) of the Singapore Agency for Science, Technology and Research (A*STAR).

Every individual has a unique genetic makeup; as such everyone will react differently to an infection. The Rhapsody platform technology encompasses a high-throughput discovery system to identify immunogenic fragments of disease causing agents that will stimulate an immune response. The platform is unique in that it is based entirely on validated experimental data which are incorporated into a proprietary computational rational design algorithm. Its initial efficacy has been validated in Hepatitis B Virus (HBV) by plugging in existing, marketed vaccines into the platform, to compare its predicted human binding with known efficacy in the field. The platform has already successfully predicted HBV peptide binding with close to a 100% accuracy rating. This accuracy rank places the Rhapsody Biologics PPV platform significantly above the other methods used in vaccine prediction which ranges only 60%-70% in accuracy. Additionally, the technology can be used to create vaccines capable of universal coverage, and eliminating the non-responder effect, a common occurrence in about 10-20% of people when given a conventional vaccine.

The company is in talks with two major pharmaceutical companies to develop vaccines with based on the PPV platform. Key potential customers include big pharmaceutical and the biotechnology companies.

Rhapsody Biologics was founded in October 2009 as a spin-off from SigN, and is anchored with a portfolio of technologies licensed from Exploit Technologies. The portfolio is based on the work done under the leadership of Prof Ren Ee Chee and his founding team of researchers at SigN. The team has translated eight years of research into a platform for developing the world's largest validated database of vaccine peptide epitopes, which is binding to HLA molecules.

Mr Richard Kivel, the Chairman and CEO of Rhapsody Biologics, said, "The field of vaccine development is growing rapidly and will exceed \$20B by 2012. The continued growth in this industry will depend on innovation and breakthrough technology like that of Rhapsody Biologics. We are focused on areas of unmet need in both prophylactic and therapeutic vaccines and will begin working with leading vaccine development companies later this year."

Commenting on the process of starting the company, Prof Ren Ee Chee, the Founder and Director of Rhapsody Biologics, added, "Technology is the major driving force that shapes human society. Hence it is indeed gratifying that our research is able to venture into another dimension, which is to develop products that have an impact on human health. A*STAR has created an ecology which is highly conducive for scientific ideas to be turned into real-life solutions and this has been critical for us to get to this point. Richard Kivel brings a wealth of entrepreneurial skill and experience to Rhapsody Biologics and under his strong leadership, we are confident that the company will become a success."

Philip Lim, Chief Executive Officer of Exploit Technologies, said, "We are happy to have put together a commercialisation team to partner the SigN team in moving good science from lab to market. Everyone brought unique perspectives and active minds to the process. After years of intensive R&D work, we have now reached the point where the scientific founding team is ready to move it into the commercial stage. I commend the team for their enterprising spirit in the founding of Rhapsody Biologics. We are looking forward to having more of such promising and innovative start-ups from A*STAR to embark on the technopreneurship path."

Prof Philippe Kourilsky, Chairman of SigN, said "This novel breakthrough approach by the dedicated research team led by Prof Ren at SigN is truly commendable. It is consistent with SigN's mission at A*STAR to improve the healthcare of people through cutting edge human Immunology research, and also contribute to the nation's socio-economic well-being. This exemplary story will motivate the SigN community to continuously make impactful discoveries."

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Enc: Notes to the editor

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About Rhapsody Biologics (S) Pte Ltd

Launched in October 2009, Rhapsody Biologics aims to be the leader in the business of Personalised Vaccines. Using an IP portfolio from an exclusive license secured from A* STAR, Rhapsody Biologics has created a versatile Personalized Peptide Vaccine (PPV) platform to predict and optimize peptide vaccines for use at an individual and population level. To do this, Rhapsody has developed a platform technology that encompasses a high-throughput discovery system to identify immunogenic fragments (peptides) from disease causing agents that will stimulate an immune response.

The platform is unique in that it is based entirely on validated experimental data which are incorporated into a proprietary computational rational design algorithm. This accuracy rank of the Rhapsody Biologics PPV platform is significantly superior to other methods used in vaccine prediction. Just as oncology therapy has been transformed by the use of genomics and targeted medicines, Rhapsody Biologics is leading the shift from generic to personalized vaccine development.

For more information, please email info@rhapsodybio.com.

About Exploit Technologies Pte Ltd

Exploit Technologies is the strategic marketing and commercialisation arm of the Agency for Science, Technology and Research (A*STAR). Its mission is to support A*STAR in transforming the economy through commercialising R&D. Exploit Technologies enhances the research output of A*STAR scientists by translating their inventions into marketable products or processes.

Through licensing deals with industry partners and spin-offs, Exploit Technologies is a key driver of technology transfer in Singapore. It actively engages industry leaders and players to commercialise A*STAR's technologies and capabilities, bridging the gap from Mind to Market. Exploit Technologies' charter is to identify, protect and exploit promising intellectual property (IP) created by A*STAR's research institutes.

For more information, please visit www.exploit-tech.com.

About the Singapore Immunology Network (SIgN)

SIgN, officially inaugurated on 15 January 2008, is a research consortium under A*STAR's Biomedical Research Council. It is aimed at building on the strengths of the existing immunology research groups at A*STAR, as well as expanding and strengthening the immunology research expertise in Singapore. SIgN's objectives include coordinating basic, translational and clinical research needed to establish immunology as a core capability in Singapore. The major focus areas of research at SIgN are Infection and Inflammation, in which SIgN researchers investigate immune responses and regulation in disease-specific contexts. Through this, SIgN aims to build up a strong platform in basic human immunology research for better translation of research findings into clinical applications. SIgN also sets out to establish productive links with local initiatives within Biopolis and across Singapore, as well as to obtain international recognition as a leading immunology research hub while establishing relationships with the best institutions in the world.

For more information about SIgN, please visit www.sign.a-star.edu.sg.

NOTES TO THE EDITOR

Information on Rhapsody's Personalised Peptide Vaccine (PPV) Platform Technology

- Vaccines have been around for about 200 years, since Edward Jenner started using cowpox to vaccinate against smallpox. Yet still have problems with vaccine design.
- Rhapsody's research strategy aims to find a new, safe and effective vaccine.
- The traditional methods of vaccination, such as using live, attenuated or dead pathogens, can have side effects and may carry risks. For example, an attenuated vaccine may undergo a secondary mutation and then become infectious again. The newer generations of vaccines are known as subunit vaccines, and these are based on fragments of the pathogen that stimulate an immune response. These are called as subunits antigens.
- Individuals have different immune responses. Different versions of the proteins, called human leukocyte antigens (HLAs) are present, that recognize antigens of bacteria, viruses and other microorganisms. As such, one human immune system might recognize different fragments of a pathogen as compared to other.
- Rhapsody's research and development involves the use of advanced algorithms — a software approach — to predict which fragments of a pathogen are likely to activate a strong immune response, taking into account individual genetic variation in HLAs. These fragments are candidates for developing subunit vaccines.
- Prof. Ren Ee Chee has developed a series of process improvements that improves the sensitivity of making HLA-peptide refolded complexes.