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Launch of the First Singapore Company to Develop Vaccines for Infectious Diseases in Humans

Company Aims to Have a Team of 30 Skilled Staff in 2006

4 May 2005, Singapore – SingVax Pte Ltd, Singapore's first vaccine development company, announced its launch today. The company has been founded by two vaccine veterans from the industry and Bio*One Capital, a leading fund management company for biomedical sciences in Singapore.

SingVax focuses on developing prophylactic vaccines for infectious diseases prevalent in humans in the Asia Pacific region. The company targets vaccine candidates that address significant unmet medical needs, focusing on products that can rapidly enter clinical development. SingVax is building up its in-house vaccine development infrastructure, and currently has two products in development. These are a Japanese Encephalitis (JE) vaccine for the prevention of JE virus infection and an Enterovirus 71 (EV71) vaccine for the prevention of Hand, Foot and Mouth Disease.

"There is a growing need for new and improved vaccines to fight against emerging and re-emerging infectious diseases. SingVax has adopted a product-focused approach, targeting infectious diseases in this region and aims to be the partner of choice for companies seeking to access the vaccine market in the Asia Pacific region," said Mr Douglas Thomson, CEO of SingVax.

"SingVax presents an exciting investment opportunity for Bio*One Capital to develop novel and improved vaccines for infectious diseases which have promising market potential. We are pleased to fund this company which has highly experienced management and strong scientific expertise. Vaccine and



biopharmaceutical development will continue to be an area of tremendous interest to Bio*One Capital," said Ms CHU Swee Yeok, Chief Executive of Bio*One Capital.

SingVax's product development programmes will be carried out at its over 4,000 square feet facility, located at the Helios building within the Biopolis, a world-class R&D complex in Singapore. SingVax will grow to a team of 30 professional and skilled staff in 2006.

Japanese Encephalitis

SingVax is developing an improved vaccine, which aims to have significant advantages over existing products. SingVax's JE vaccine is based on the inactivated whole JE virus particles. In order to generate the JE viral particles, SingVax leverages upon the PER.C6[®] technology, licensed from Crucell N.V., a European biotech company. SingVax plans to meet the demand in both the endemic and travel markets for a JE vaccine, with improved safety and increased compliance.

Enterovirus 71

SingVax's vaccine will be targeted at children before they enter child-care centres, in order to reduce transmission. SingVax aims to develop a prophylactic EV71 vaccine. SingVax's development of an EV71 vaccine will address the growing unmet medical need for a safe and effective preventative treatment.

"There are significant opportunities for SingVax that addresses unmet medical needs. For Japanese Encephalitis, the market potential for a vaccine is estimated at US\$250 million, while for an EV 71 vaccine, it is estimated at US\$150 million. To fully develop our vaccines, SingVax will use a combination of in-house product development, collaborations for further clinical development and seek partners for commercialisation," said Mr Thomson.



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Additional notes to editors:

Emerging vaccine opportunities

There is currently a significant need for improved and novel vaccines to meet the continuing challenge of emerging infectious diseases. Due to globalisation, urbanisation and ineffectiveness of current treatments, infectious diseases are causing greater social and economic impact. Worldwide, infectious diseases result in an estimated 13 million¹ deaths per annum, ranking as the second biggest killer.

The Asia Pacific region is poised for strong growth in the area of medical products, in particular vaccine development. This is spurred by the growing economic and disease burden of infectious diseases, prevalent to the region. Such diseases typically do not attract vaccine development activities until the risk to Western economies rises.

However, increased prosperity within the Asia Pacific region leads to a greater demand for quality healthcare, as the people are both able and willing to pay for better healthcare. It is predicted that within the next 3-5 years, Asia will spend \$225 billion² on healthcare. Furthermore, international travel has led to the emergence of the “global village”, giving an upside opportunity for product crossover to and from Western markets. These factors create significant opportunities for the private vaccine market.

About Japanese Encephalitis

Japanese encephalitis (JE) is a severe viral disease that is spread by infected mosquitoes in Asia. Approximately 30,000 to 50,000 cases are reported annually, with fatalities at about 25% of reported cases. Those at risk include residents in endemic regions, military deployed to endemic areas, and expatriate travellers. Mild infections may result in a fever and headache, but severe cases can lead to high fevers, paralysis, seizures, coma and death.

There are existing JE vaccines, which are mostly mouse brain-derived vaccines that require multi-doses. While these are protective in 75-90% of the subjects, there are safety concerns relating to these vaccines, as they may result in mild to severe adverse reactions.

About Enterovirus 71

Enterovirus 71 (EV71) is a major causative virus of Hand, Foot and Mouth Disease (HFMD), a common illness amongst infants and children. HFMD is characterised by fever, sores in the mouth and a rash with blisters. In a small

¹ World Health Organisation 1999

² Pacific Bridge Medical, August 2001

proportion of cases, HFMD results in severe neurological sequelae and even death. Currently, there is no vaccine available, and treatments are limited to palliative care.

Outbreaks of EV71 have been reported around the world since 1969. However, during the late 1990s, there has been a significant increase in EV71 epidemic activity throughout the Asia Pacific region. In 1998, a large outbreak was reported in Taiwan, resulting in 405 severe cases in children and 78 deaths, with recurrences in 2000 and 2001. Outbreaks were also reported in Malaysia with 30 deaths in 1997, Taiwan, Korea and Australia. In Singapore, there have been currently 5420³ cases of HFMD in 2005.

SingVax's team

Mr Douglas Thomson – Chief Executive Officer

Mr Thomson has over 20 years of business experience, of which more than 10 years are focused within the vaccine industry. He has acquired expertise in biotech commercialisation, intellectual property management, start-up business development, and establishing collaborations.

Prior to setting up SingVax, Mr Thomson was Director of Business Development at Microscience Ltd, a vaccine company in the U.K., where he led business and commercial development functions. He also has previous experience in starting up a manufacturing company that focused on vaccines.

Dr Joseph Santangelo – Development Director

Dr Santangelo has over 20 years of scientific experience, having built up strong academic, industrial and development capabilities. He has driven R&D activities and assembled scientific and development teams in another start-up biotech company.

SingVax will also receive direction and guidance from its Board of Directors and international Scientific Advisory Board. These will play a key role in positioning SingVax to become a leading vaccine development company. SingVax is currently finalising the members of its Board of Directors and Scientific Advisory Board.

About Bio*One Capital Pte Ltd

Bio*One Capital is a leading fund management company for biomedical sciences in Singapore and Asia with a global presence in US and Europe. It aims to enhance the level of Biomedical industrial activities in Singapore as well as generate long-term capital gains. Bio*One Capital has invested in over 80

³ Published by the Communicable Disease Surveillance Branch, Ministry of Health Singapore, figure is for year 2005 up till 23 April 2005



promising global biotechnology, medical technology companies and start-ups in Singapore. Other than providing financial resources, Bio*One Capital offers a strong combination of broad scientific, clinical and medical expertise, and financial and investment experience to support portfolio companies. For more information, please visit <http://www.bio1capital.com>