

# **MEDIA RELEASE: *Vaxxas Pty Ltd***

## **New vaccine delivery company kick starts with \$15M venture capital investment**

### **Funding to commercialise new needle-free vaccine delivery technology**

**EMBARGOED TO TUESDAY 2 AUGUST 2011, 10.30am**

BRISBANE, QLD, AUSTRALIA - One of Australia's largest ever investments in a start-up biotechnology company - AU\$15million – has been made with the aim of developing a revolutionary new needle-free vaccine delivery system.

The investment led by OneVentures, with co-investors Brandon Capital, the Medical Research Commercialisation Fund (MRCF), and US-based HealthCare Ventures in the new company, Vaxxas Pty Ltd, will enable Professor Mark Kendall of UQ's Australian Institute for Bioengineering and Nanotechnology (AIBN) to continue his pioneering research and development of the Nanopatch™.

The Nanopatch™ has thousands of small projections designed to deliver the vaccine to abundant immune cells in the skin, whereas the traditional syringe hits the muscle where there are few immune cells.

Early stage testing in animals so far has shown that a Nanopatch delivered flu vaccine was effective with only 1/150<sup>th</sup> of the dose compared to a syringe and that the adjuvants currently required to boost the immunogenicity of vaccines may not be needed.

In addition to improving the efficiency of delivery, the Nanopatch has the potential to dramatically improve patient convenience and reduce the complications associated with needle phobia, needle stick injuries and cross contamination, which are key global health issues.

The Nanopatch™ is designed for thermostability and to not require refrigeration, making transport much cheaper and easier, particularly to developing nations around the world.

Professor Kendall said in the developed world about 14% of a vaccine's costs were attributed to maintaining the cold chain and in the developing world, the cold chain impact on vaccines is even greater.

"In Africa about half of vaccines aren't working properly because of a breakdown in the cold chain".

"The Nanopatch™ also offers a way to stop needle-stick injuries during vaccination – which again is a particularly important problem in Africa; with a third of vaccines affected by other complications brought about through cross contamination needle stick injury," he said.

OneVentures General Partner Dr Paul Kelly said the significance of this investment was not just in its size.

"This investment syndicate includes both local and international investors which is a real vote of confidence in the Nanopatch™ approach and an appreciation of the potential of the technology to revolutionise vaccine delivery worldwide," Dr Kelly said.

"This is a great example of OneVentures' strategy of identifying game changing Australian technology with global market reach and relevance and putting the resources together to enable that to happen. These resources are not just financial but expertise, networks and the experience in building high-growth companies and taking novel technologies through to innovative products. This is akin to the traditional model of venture capital of recycling proven entrepreneurial expertise."

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As part of this strategy and in connection with the investment, Dr. Paul Kelly of OneVentures, Dr. Stephen Thompson of Brandon Capital Partners, and Douglas E. Onsi of HealthCare Ventures will join the Board of Directors of Vaxxas, along with Dr Dean Moss, General Manager of Life Sciences at UniQuest.

The investment was negotiated on behalf of the University of Queensland by UniQuest Pty Limited, The University of Queensland's main commercialisation company, UniQuest, has led the commercialisation of the Nanopatch™ technology to date, and will hand over the responsibility to Vaxxas following this investment.

Dr Stephen Thompson, Managing Director of Brandon Capital Partners, said launching Vaxxas as a company was a critical next step for the Nanopatch technology.

"In Australia, we invest heavily in our excellent research and development capability but have a relatively poor record of taking those technologies to world markets. The syndicate's investment in Vaxxas is consistent with its willingness to work with Australia's leading research institutes, including the AIBN, to transform this exciting research effort into a commercially useful product. We need to convert the promise of the technology into a reality," he said.

Douglas E. Onsi, Managing Director of Cambridge, Massachusetts-based HealthCare Ventures, commented on the importance of and the breadth of the opportunity for the Nanopatch™-technology.

"We believe that the Nanopatch™ has the potential to transform vaccine delivery for the pharmaceutical industry and for patients around the world. HealthCare Ventures searches globally for the most promising innovations in life sciences, and we are very pleased to make our first Australian investment in Vaxxas," he said.

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For more information, please contact Vaxxas Director and OneVentures General Partner Dr Paul Kelly on 0450 461 824 or email [pkelly@one-ventures.com](mailto:pkelly@one-ventures.com).

#### **Additional information:**

#### **About the Nanopatch™ Technology**

The Nanopatch™ is a silicone patch with thousands of small projections designed to hit abundant immune cells in the skin. Professor Mark Kendall and his team have tested the Nanopatch™ and confirmed in animals improved immune responses compared to standard needle and syringe injection. In animals treated with influenza vaccines, the Nanopatch™ induced immune responses achieved equivalent protection with 1/150<sup>th</sup> of the delivered dose; which was 10 times better than any other delivery system tested. Other significant Nanopatch™ results have been published with the delivery of vaccines for Human Papilloma Virus (HPV), Human Simplex Virus (HSV 2), Chikungunya and West Nile Virus.

A vaccine is coated onto the Nanopatch™, which could eliminate the need for the vaccines to be refrigerated when they are stored and transported, overcoming a key global challenge for vaccines. "In the developed world about 14% of a vaccine's costs are attributed to maintaining the cold chain and in the developing world, the cold chain impact on vaccines is even greater. In Africa about half of vaccines aren't working properly because of a breakdown in the cold chain," said Professor Kendall.

Professor Kendall has been working on the Nanopatch™ for the past eight years. In 2006, he returned to Australia from the University of Oxford, accepting the role of Professor of Biomedical Engineering at the University of Queensland; supported by UQ's AIBN, Diamantina Institute and the Faculty of Health Sciences. Since then, he first secured a Queensland Smart State Senior

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Fellowship, followed by an Australian Research Council Future Fellowship; which he currently holds. In addition, Professor Kendall's Nanopatch™ research has been supported by research grants from Queensland's Smart State program, the Australian Research Council (ARC), National Health and Medical Research Council, and the Bill and Melinda Gates Foundation.

**About OneVentures [www.one-ventures.com.au](http://www.one-ventures.com.au)**

OneVentures is a venture capital firm that invests in emerging Australian technology companies with true breakout potential, differentiated technology and compelling business models in the clean technology, information technology and life sciences sectors.

OneVentures is managed by a team of partners with a skills set and track record ideally suited to collaboration with entrepreneurial management teams to foster growth and create value: a unique blend of highly successful entrepreneurs, technology business founders and corporate executives with a strong scientific pedigree, extensive off-shore experience and networks.

The OneVentures Innovation Fund is a \$40 million venture capital fund formed as an Early Stage Venture Capital Limited Partnership. OneVentures is supported by the Australian Government through the IIF program with this funding matched by institutional investors, individual high net worth investors and family offices. The IIF is an Australian Government venture capital initiative that provides investment capital and managerial expertise through licensed venture capital fund managers to investee companies.

**About Brandon Capital Partners [www.brandoncapital.com.au](http://www.brandoncapital.com.au)**

Brandon Capital Partners was established in 2007 and makes seed and venture capital investments into emerging businesses in the life science industry. Brandon Capital Partners is passionate about turning good science into improved medical outcomes. The Brandon team works with entrepreneurs to build businesses, creating value for the entrepreneurs, their teams and Brandon's investors.

The \$50 million Brandon Biosciences Fund 1 (BBF1) is supported by the Australian Government's IIF program, a venture capital initiative that supports innovation funds and fund managers with expertise in early-stage venture capital investing to commercialise the outcomes of Australia's strong research capability.

**About The Medical Research Commercialisation Fund (MRCF) [www.mrcf.com.au/page08](http://www.mrcf.com.au/page08)**

The \$51 million Medical Research Commercialisation Fund (MRCF) Collaboration is an innovative investment collaboration established in 2007 and managed by Brandon Capital Partners. The MRCF invests in early stage development and commercialisation opportunities emanating from its membership of 30 Australian medical research institutes and allied research hospitals, which includes the Australian Institute for Bioengineering and Nanotechnology (AIBN).

The MRCF IIF, LP fund is supported by AustralianSuper, StatewideSuper and the Australian Government under its IIF program. The MRCF also acknowledges the support of the State Governments of Victoria, New South Wales, Western Australia and Queensland.

**About Health Care Ventures [www.hcven.com](http://www.hcven.com)**

HealthCare Ventures is a leading global life sciences venture capital firm investing in early stage companies with potential to transform patient care. Since its founding in 1985, HealthCare Ventures has raised US \$1.6 billion in nine funds and has invested in over 100 companies, 67 as startup ventures.

**About the Research Team [www.aibn.uq.edu.au](http://www.aibn.uq.edu.au)**

The University of Queensland's Australian Institute for Bioengineering and Nanotechnology (AIBN) is an integrated multi-disciplinary research institute bringing together the skills of world-class researchers in the areas of bioengineering and nanotechnology.

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It is home to 20 research groups working at the interface of the biological, chemical and physical science to alleviate problems in human health and environmental issues.

The focus of AIBN's research efforts is on developing new products, processes and devices for improving human health and quality of life. In this way the institute goes beyond basic research to promote and develop the growth of innovative industries, which will benefit the Queensland and Australian economies.

The AIBN proudly acknowledges the financial support of Atlantic Philanthropies, the Queensland State Government and The University of Queensland toward the construction of the \$75 million AIBN research facility.

Professor Mark Kendall leads a research team at the Australian Institute for Bioengineering and Nanotechnology (AIBN) developing needle-free delivery of vaccines targeting the skin. Professor Kendall joined UQ in 2006 as a joint appointment by AIBN, the Diamantina Institute and the Faculty of Health Sciences. Prior to this at the University of Oxford, UK, he was a Lecturer (Department of Engineering Science and Magdalen College) and also Associate Director of the PowderJect Centre for Gene and Drug Delivery.

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