

# Media Release

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## Collaboration between Australia and Indonesia on the manufacture of universal flu vaccine

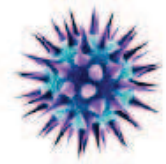
Emerging exporter, Gamma Vaccines, has concluded 12 months of discussion with Indonesia's largest vaccine company signing an MOU to undertake evaluation, manufacture and clinical trials of a 'universal flu vaccine'. Gamma-Flu™ is a uniquely inactivated whole-virus vaccine that provides broad-spectrum immunity to all influenza A viruses. Gamma-Flu™ is expected to do away with the need to produce new seasonal flu vaccines each year and to create an entirely new market for a pre-pandemic flu vaccine.

*'One of the greatest challenges in vaccinating individuals against influenza is that new strains can suddenly emerge, rendering currently available vaccines ineffective'* said Gamma Vaccines founding scientist Professor Arno Mullbacher, the Head of the Viral Immunology Group at the Australian National University.

The recent experience of swine flu, and the continuing fears of the medical, scientific and world health community of the sudden emergence of a deadly bird flu strain means that a new approach to flu vaccines needs to be contemplated that provides some protection against all influenza virus A strains, including any emergent pandemic virus.

Developed from technology invented by immunologists working at the John Curtin School of Medical Research at The Australian National University, Gamma-Flu™ is the result of more than 20 years of research. Gamma Vaccines is now commercializing this product to capture part of the estimated US\$ 4.0 billion market for seasonal flu vaccines. The Memorandum of Understanding between Gamma Vaccines, PT. Bio Farma and PT. Soho Industri Pharmasi is an important step in confirming a three-way collaboration that will see the development, manufacturing, clinical trials and distribution of the vaccine in Indonesia and other ASEAN markets.

Gamma Vaccines was spun out of ANU in July 2009. Since then the Company has devised a significant Global Health Initiative as part of its commercialisation plans aimed at making its technology available to developing countries, as demonstrated by the signing of this Memorandum of Understanding.



Professor Tim Hirst, Executive Chairman of Gamma Vaccines Pty Ltd said *‘one of the largest challenges in improving world health is to ensure that innovative technologies are made available to developing countries. Gamma Vaccines has a philosophical commitment to this. As our near neighbours, with a population of over 240M, Indonesia represents an exciting opportunity to take this technology from the laboratory to the people. This will be achieved as a result of this important collaboration.’*

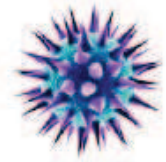
### **Gamma Vaccines Technology**

The emergence of a highly virulent influenza virus that causes a horrifying level of mortality has been predicted for some time. Modeling of the consequences of a 1968 Hong Kong-type flu recurring today has predicted 62 million deaths worldwide.

Gamma Vaccines ‘universal flu vaccine’ – Gamma-Flu™ is a whole inactivated, gamma-irradiated influenza virus vaccine that offers cross-protective immunity to entirely different influenza A strains.

The key to providing broad-spectrum immunity to different flu virus strains requires vaccines that can trigger protective cytotoxic T-cell responses to destroy virus-infected cells. Gamma Vaccines’ approach produces a vaccine of killed influenza viruses that preserves the proper structure of the virus and its various proteins. By using gamma irradiation – a procedure in wide-spread use to sterilize surgical instruments and stop spoilage of perishable fruits – a killed virus preparation that is no longer infectious can be obtained, which can be delivered by different routes of administration to produce a potent immunity to different influenza virus strains and subtypes.

Unlike seasonal flu vaccines that fail to induce protection even against drifted influenza viruses of the same sub-type, gamma-irradiated influenza virus vaccines have afforded protection against all influenza A strains tested.



***Gamma Vaccines Pty Ltd***

Gamma Vaccines was established in 2009 to solve one of the great challenges in infectious disease – the development of a ‘universal’ cross-protective influenza virus vaccine. Gamma Vaccines’ proprietary technology was invented by Professor Arno Mullbacher and Dr Mohammed Alsharifi, leading viral immunologists from The Australian National University’s John Curtin School of Medical Research.

The company has attracted seed investment funds and early stage innovation grants from the federal government and the Australian Capital Territory government to support its development of a universal flu vaccine. The company has a clearly defined development strategy for its vaccine into Phase 1 and Phase 2 clinical trials.

The company is headquartered in Canberra and has a firm commitment to Global Health initiatives for developing countries – with the company’s initial focus being on the transfer of the technology to Indonesia.

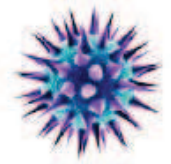
***PT. Bio Farma***

PT. Bio Farma is the largest vaccine company in the ASEAN countries with a 120 year history of producing sera and vaccines. Founded in 1890 in Jakarta, Indonesia, Bio Farma is now headquartered in Bandung in Western Java and is a founder member of the Developing Country Vaccine Manufacturers Network and is a supplier of vaccines to the UN Agencies and the global market.

Since it was established Bio Farma has produced an extensive range of vaccines including small pox, rabbies, cholera, typhoid, polyvalent bacterial vaccine and snake venom anti-serum. Polio and measles vaccine production was established at Bio Farma in 1992.

By the year 1997 Bio Farma had commenced exporting vaccines. At this time the World Health Organisation appointed Bio Farma as one of the Global Training Network sites with respect to Quality Assurance of Live Attenuated Polio and Measles Vaccines.

In 2004 Bio Farm commenced production of the Combo vaccine of DTP – Hepatitis B vaccine.



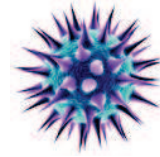
***PT. Soho Industri Pharmasi***

PT. Soho Industri Pharmasi is a part of The Soho Group based in Jakarta, and is one of Indonesia's fastest growing pharmaceutical companies. It comprises a significant marketing and distribution business, PT Parit Padang Global that operates through 25 branches throughout Indonesia. It has over 5000 employees, plus distribution and marketing of SOHO products in selected ASEAN countries, Africa and Latin America. The SOHO Group's two pharmaceutical divisions PT Ethica Industri Farmasi and PT Soho Industri Pharmasi manufacture API medicines and healthcare and herbal products.

The first company in SOHO Group, Ethica was founded in 1946 and Soho Group in the past 5 years has been the stand out pharmaceutical company in Indonesia - growing more than double of market growth. PT Soho Industri Pharmasi is an equity investor in Gamma Vaccines.

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References: <http://www.abc.net.au/catalyst/stories/2613604.htm?>



23<sup>rd</sup> November 2010

Collaboration Agreement signed between  
Gamma Vaccines Pty Ltd, PT Bio Farma & PT Soho Industri Pharmasi



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Gamma Vaccines

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