

**Sir Mark Oliphant Conferences 2008: Frontiers of Science & Technology**  
**Vaccine and Immunotherapy Technologies**  
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**MEDIA RELEASE**

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**MORE CANCER VACCINES ON WAY**

More vaccines for preventing infectious organisms that cause cancer are on the way.

However medical science is still grappling with the challenge of developing effective immunotherapies for treating patients with cancer, Professor Ian Frazer, developer of GARDASIL, the world's first cervical cancer vaccine will tell the Conference on Vaccine and Immunotherapy technologies in Canberra tomorrow.

“Anti-cancer vaccines and immunotherapies are still a glass half full,” he says. “We have achieved much, but there is still much more to be done. In the next 20 years cancer will become the commonest form of death in the world.”

The world now has two vaccines which help prevent cancer – against Hepatitis B, which causes liver cancer, and against the human papilloma virus which causes cervical cancer and genital warts.

Two more are under development in overseas laboratories, Prof. Frazer says. One is for Epstein-Barr virus, a herpesvirus which is linked with the rare cancers Burkitt's lymphoma and nasopharyngeal carcinoma and is associated with increased risk of non-Hodgkin's lymphoma and multiple myeloma. The other is against hepatitis C virus which is associated with liver cancer.

Illustrating the challenges which researchers face is helicobacter, the stomach microbe that causes ulcers. Some strains appear to trigger stomach cancer, while others are thought to help protect against oesophageal cancer – and the delicate task is to devise a vaccine approach that will prevent the former without limiting the beneficial strains, he says.

Immunotherapy treatment for cancer patients is also a ‘glass half full’, he says. Early trials of vaccines to help in cancer treatment have been disappointing with only 10-20 per cent of patients responding. But there is encouraging news on the way.

“Much closer study of the response of the cancer to the vaccine has showed us that the problem was not with the vaccine itself – but how the cancer dealt with it,” Prof. Frazer says.

“When vaccine is administered, the cancer responds immediately with a ‘don’t kill me’ signal. It produces cytokines (proteins) that block the effect of the vaccine.

“We now think we can switch off this particular defence mechanism of the cancer by adding some antibodies which inhibit its ability to produce the blocking cytokines. These would be administered at the same time as the vaccine, and buy the vaccine enough time to act.

“This great advantage of immunotherapy is that it is very safe to use, with few of the toxic side effects of normal chemo or radiotherapy. Because of this, immunotherapies can be administered generally without having to target the cancer specifically, making them much easier to deliver.”

Prof. Frazer says the new cytokine-inhibiting approach has potential for treating a range of skin-related tumours such as melanoma, kidney cancer and possibly bowel cancer.

As chairman of the Sir Mark Oliphant Conference on Vaccine and Immunotherapy Technologies, Prof. Frazer says: “Infectious diseases remain a global problem, and vaccines are the best hope for their worldwide control in the 21<sup>st</sup> Century. This meeting will bring together researchers from around the world, to share the latest ideas about how to develop the new vaccines the world is waiting for.”

The Sir Mark Oliphant Conference on Vaccine and Immunotherapy Technologies is being held at the Shine Dome, Canberra from April 9-11, 2008.

The Conference is hosted by Australian Academy of Science (AAS) and the Australian Academy of Technological Sciences and Engineering (ATSE) and sponsored by the Department of Innovation, Industry, Science and Research (DIISR).

Media are welcome to attend and interview participants.

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