



University of Queensland research heralds vaccine technology breakthrough (图)

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08 May 2007, New Queensland research may lead to a groundbreaking vaccine technology that could wipe out an infection that commonly affects young children.

Respiratory syncytial virus (RSV) infection is a widespread infant illness that has been linked to asthma and can be deadly, but may be curable by the development of this new vaccine technology by the Sir Albert Sakzewski Virus Research Centre and The University of Queensland's Faculty of Biological and Chemical Sciences.

Research centre director Professor Robert Tindle said RSV cost millions of dollars a year in health care in Australia and billions in the United States. It can lead to severe and life-threatening lower respiratory tract infection or bronchiolitis.

About one in 1000 die from the illness. However, the vaccine that is being developed is expected to treat the illness in infected people as well as prevent against it.

Those most at risk from RSV are children aged two and under, especially those with weak respiratory symptoms, elderly people and the immunocompromised, such as people with HIV or those who have weakened immune systems due to treatments such as chemotherapy.

“Benefits of the vaccine will include a huge saving in health care costs,” Professor Tindle said.

“(It will also) relieve the burden of worry on thousands of parents who every year go through all kinds of angst because their young children are going into hospital with very worrying symptoms and it would prevent the death of the children who succumb to it and die.”

With preclinical modelling in mice having been encouraging, Professor Tindle said clinical trials were forthcoming, leading the way to the vaccine becoming available in the clinic.

He hoped it would become one of the vaccines given to all infants in their first three months of life.

The mature paediatric market for an RSV vaccine has been estimated at approximately US\$800 million (LeadDiscovery Ltd, 2004).

Professor Tindle said the importance of the research project was double-barrelled because, along with helping children, it included forming a new type of vaccine.

The research group has developed a “recombinant” vaccine using the existing Hepatitis B vaccine to carry the RSV peptides.

“Hepatitis B surface antigen forms virus-like particles, which are the vaccine used for Hepatitis B vaccine all around the world,” Professor Tindle said.

“We’re taking advantage of that to piggyback, if you like, the respiratory syncytial virus peptides into the vaccine.”

He hoped the vaccine would ultimately be able to protect people against both diseases in the one shot and, even better, the recombinant vaccine model could potentially be used for most infectious diseases and some cancers, Professor Tindle said.

Playing a key role in the research group is international expert on recombinant vaccines, Dr Scott Thomson. Professor Tindle said gaining Dr Thomson’s expertise was a coup for the project.

“If anyone’s going to get the (vaccine) it’s going to be Scott,” Professor Tindle said.

Working with UniQuest Pty Ltd, Professor Tindle has received funding from UniSeed Pty Ltd and the Symbiosis Group Ltd, building on \$200,000 through Smart State Golden Casket and approximately \$400,000 from National Health and Medical Research Council.

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