香港大學李嘉誠醫學院
香港沙宣道二十一號

The University of Hong Kong
Li Ka Shing Faculty of Medicine
21 Sassoon Road, Hong Kong

Press Release

HKU-Pasteur Research Centre Develops Novel Technique to Investigate How Influenza Viruses Enter Human and Animal Cells

Researchers at the **HKU-Pasteur Research Centre** in Hong Kong have collaborated with the **Griffith University Institute for Glycomics, Queensland, Australia**, to develop a novel technique which will allow influenza virus specialists and drug researchers to more precisely identify the molecules found on human or animal cells that the influenza virus uses to infect a cell.

"It is like a thief using a key to open a lock," said **Dr Jean Michel Garcia** who led the study from HKU-Pasteur Research Centre. "A better understanding of how the key finds and fits into the lock will help us fight Flu."

A paper on the research was published this week in the world's leading international chemistry journal *Angewandte Chemie International Edition,* co-authored by Dr Jean Michel Garcia at the HKU-Pasteur Research Centre and Dr Mark von Itzstein at the Griffith University Institute of Glycomics.

It describes for the first time the combination of the state-of-the-art technologies of "Saturation Transfer Difference Nuclear Magnetic Resonance" (STD-NMR) and "virus-like-particles" bearing the haemagglutinin of the H5N1 influenza virus, to carry out their studies. Virus-like-particles are non-infectious "mock-viruses" that can be exploited to study highly lethal viruses more safely.

Professor Malik Peiris, Scientific Director of HKU-Pasteur Research Centre and Chair Professor of HKU's Department of Microbiology, said that a "better understanding of how influenza viruses attach to cells will clarify why the highly pathogenic H5N1 virus finds it difficult to infect human cells and why sustained human-to-human transmission is uncommon. Through this technique it is possible to plan a systematic interrogation of the virus-cell interaction to define which mutations of the virus will enable more efficient viral entry.

With this approach a precise mapping, at atomic level, of the initial molecular contacts between the virus and the host cell can be determined and, in the longer term, it will aid rational design of better drugs to treat influenza virus infections. The need for a continued search for novel drugs for treating influenza is highlighted by the recent emergence of resistance to the commonly used drug oseltamivir (Tamiflu^{TM}). This new approach can be used to develop novel therapeutic class to fight both seasonal and pandemic Flu.

Dr Roberto Bruzzone, the Chief Executive Officer of the HKU-Pasteur Research Centre, said that "the mission of the HKU-Pasteur Research Centre is to bring together the scientific

excellence of the International Pasteur Network and that of The University of Hong Kong in synergy with other international collaborators in the region. This study is an excellent example of this."

February 5, 2008