

Gates Foundation grant to boost HIV research at HKU

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The AIDS Institute at the University of Hong Kong (HKU) recently received a US\$100,000 grant from the Bill and Melinda Gates Foundation for research focusing on a new HIV vaccine.

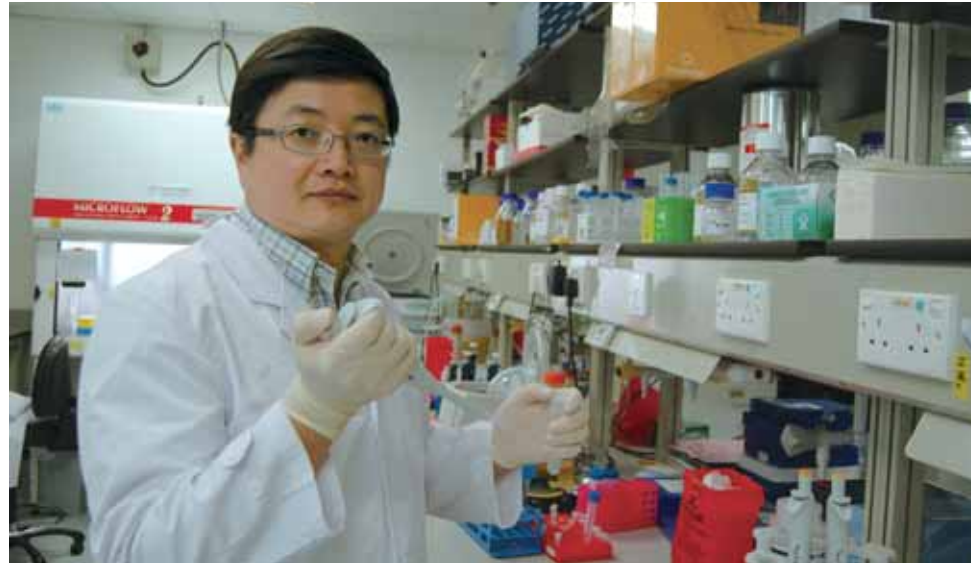
The research project, conducted by Institute Director, Dr. Zhiwei Chen, was awarded one of the 104 grants in the first funding round of Grand Challenges Explorations, a US\$ 100 million initiative to explore novel solutions for health challenges in developing countries.

Grand Challenges Explorations relies on a streamlined application process, with applications limited to two pages and no requirement for preliminary data. Grant decisions are announced within 3 months.

"This is one of the most important research grants we have received since the establishment of our AIDS Institute in November 2007. The funding will allow us to conduct innovative research projects on AIDS vaccine immediately," commented Chen.

His proof-of-concept study, conducted in a Macaque monkey model, will evaluate a new type of HIV vaccine which can induce neutralizing antibodies against HIV-1.

"The approach we have proposed has not been previously studied, and no papers have been published using this approach. We focus on the induction of protective immune responses to block the entry of HIV



Dr. Chen

into target cells. We plan to study why HIV and SIV [simian immunodeficiency virus] use CCR5 as a major co-receptor for infection despite an over 40 percent difference in viral envelope. The findings will lead to a new vaccine," he explained.

According to Chen, the main barrier to developing an HIV vaccine lies in the high variability of HIV, which easily generates immune escape mutants. "Furthermore, it is very hard to induce cross-reactive neutralizing antibodies based on HIV immunogen design, and there is no proper HIV animal model for vaccine testing," he pointed out.

Currently, there are several phase I and

II trials of HIV vaccines, and data from an ongoing efficacy trial are expected in 2009. "However, it's a long process. In my personal experience, it took us over 8 years to bring two HIV vaccines to the end of phase I trials. For a commercially available vaccine, it still requires years of efforts," estimated Chen. Since his appointment as Director of HKU's AIDS Institute, Chen has obtained two other research grants from the US national Institute of Health (NIH). Previously, he was an Assistant Professor at the Aaron Diamond AIDS Research Center, Rockefeller University, New York, US, working in the laboratory of Dr. David Ho.



Ho, who discovered the dynamic nature of HIV replication in vivo back in the 1990s, is best known for the development of HAART (highly active anti-retroviral therapy), which controls HIV replication. Ho is also Honorary Director of the AIDS Institute at HKU.

"We are very pleased that the Gates Foundation has made the financial commitment to support our AIDS vaccine research at HKU. This award also indicates that our research is recognized at the international level," remarked Professor Lap-Chee Tsui, HKU's Vice-Chancellor and President.

Chen stressed that until an HIV vaccine or a therapeutic cure for AIDS becomes available, it is necessary to strengthen the preventive measures and to promote the availability of best therapeutic drugs to all AIDS patients to reduce mortality and HIV transmission. "In addition, governments and other organizations must increase research funding to help find solutions to end the AIDS epidemic," he said. "Providing sufficient resources for protecting young people is also a priority, because about 40 to 50 percent of newly infected persons worldwide are between 15 and 25 years of age."