

HKU Strategic Partnerships Fund with University College London
Final Report

Project title

Immune dynamics after repeated influenza vaccination

Investigators

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Deliverable 1: Statistical analyses to study the effect of repeated influenza vaccination on antibody waning in both the HK and UK cohorts, specifically:

1. To estimate the antibody waning after repeated vaccination over time;
2. To estimate the correlation of HAI titer with protection against laboratory-confirmed infection; and
3. To determine whether this protection differs between individuals who received multiple influenza vaccinations over the years.

Output:

In the Hong Kong cohort (Kiddivax study), a total of 796 children were enrolled at the start of study before the 2009/10 influenza season, among which 367 (46%) were followed up and provided blood specimens every 6 months for 5 full2 (re) 0.2 ()] TJ ET 419.12 cm BTT1 1 Tf0.2.2 (l) 0(s) -0.2

Figure 1. Influenza HAI antibody titer measured in same individuals every 6 months over five years since their last influenza vaccination or PCR-confirmed influenza A/B virus infection. **A)** Individuals who have reported never receive an influenza vaccination, nor had a PCR-confirmed influenza A/B virus infection. **B)** Individuals who had reported received at least once influenza vaccination but did not have a PCR-confirmed influenza A/B virus infection. pH1: Influenza A(H1N1pdm09); sH3: A(H3); B.Vic: Influenza B(Victoria); B.Yam: B(Yamagata).

Deliverable 2: Organization of 2 virtual half-day workshops for convening a consortium of multi-disciplinary scientists, specifically:

1. To identify a unifying research agenda and future funding opportunities; and
2. To establish a writing group to develop further grant applications based on the work initiated in Deliverable 1.

Output:

The team have met 3 times during academic meetings (New York, London and Stockholm) for the discussion of the project and future research direction. We identified important research questions to be addressed, including the waning of vaccine- or infection-induced serum antibodies against influenza hemagglutinin (HA) and neuraminidase (NA), which are being considered as additional candidate correlates of protection (CoPs) for universal influenza vaccine, and their contribution to protection.

These have contributed to the following grant applications: