Editorial

Dissemination reports are concise informative reports of health-related research supported by funds administered by the Food and Health Bureau, for example, the *Research Fund for the Control of Infectious Diseases* (which was consolidated into the *Health and Medical Research Fund* in December 2011). In this edition, 10 dissemination reports of projects related to respiratory infectious diseases and viral hepatitis are presented. In particular, three projects are highlighted due to their potentially significant findings, impact on healthcare delivery and practice, and/or contribution to health policy formulation in Hong Kong.

The threat from zoonotic transmission of avian influenza is ever present. H9N2 influenza viruses have become enzootic in terrestrial poultry populations around the world. Guan and Smith[1] conducted extensive surveillance of poultry in China and Hong Kong to characterise the H9N2 viruses found in poultry in southern China and the extent of their reassortment with other influenza viruses, particularly the highly pathogenic H5N1 viruses. They found that the poultry system in southern China allows H9N2 viruses to develop in multiple ways with mixing among species and the opportunity to transmit to humans. To prevent these developments leading to public health problems like those caused by the highly pathogenic H5N1 viruses, the authors advise better separation of birds within the poultry farming and marketing systems.

The specificity of influenza virus for a particular host cell is mediated by the interaction of haemagglutinin, a viral cell surface glycoprotein with host cell glycoconjugate receptors that contain terminal sialic acid residues. A new pharmaceutical agent (sialidase) effectively degrades receptor sialic acid for both human and avian influenza and potentially confers protection against a broad range of influenza viruses. Nicholls et al[2] tested the presence of infection of human upper and lower respiratory tract tissue after sialidase treatment with avian and human viruses. Both prophylactic and therapeutic sialidase treatment was able to prevent infection by avian and human influenza viruses. Sialidase therapy offers a potentially useful clinical option and is now in phase II clinical trial.

Hepatitis C is a highly infectious disease that imposes a high health, social, and financial burden. Ma et al[3] constructed a new platform for the virtual screening of Janus kinase 2 (JAK2) Type II inhibitors and utilised it to identify amentoflavone as a lead scaffold for the development of new inhibitors. Novel natural inhibitors were developed and showed anti-JAK2 activity and antiviral activity in cellular systems. The compounds potentially represent a novel therapeutic approach to the treatment of hepatitis C, and may supplement existing regimens for hard-to-treat hepatitis C virus genotypes in Hong Kong.

We hope you will enjoy this selection of research dissemination reports. Electronic copies of these dissemination reports and the corresponding full reports can be downloaded individually from the Research Fund Secretariat website (http://www.fhb.gov.hk/grants). Researchers interested in the funds administered by the Food and Health Bureau also may visit the website for detailed information about application procedures.

Supplement co-editors

Dr Edmond SK Ma
Consultant
(Research Office)
Food and Health Bureau

Dr Richard A. Collins
Scientific Review Director
(Research Office)
Food and Health Bureau

References

1. Guan Y, Smith GJ. Genetic characterisation of H9N2 influenza viruses in southern China. Hong Kong Med J 2016;22(Suppl 4):4-6.
2. Nicholls J, Chan M, Kwong D. Susceptibility of the upper respiratory tract to influenza virus infection following desialylation. Hong Kong Med J 2016;22(Suppl 4):7-9.
3. Ma ED, Leung CH, Chiu P, Cheng YC. Structure-based discovery and development of natural products as Type II JAK2 inhibitors for the treatment of hepatitis C. Hong Kong Med J 2016;22(Suppl 4):32-6.