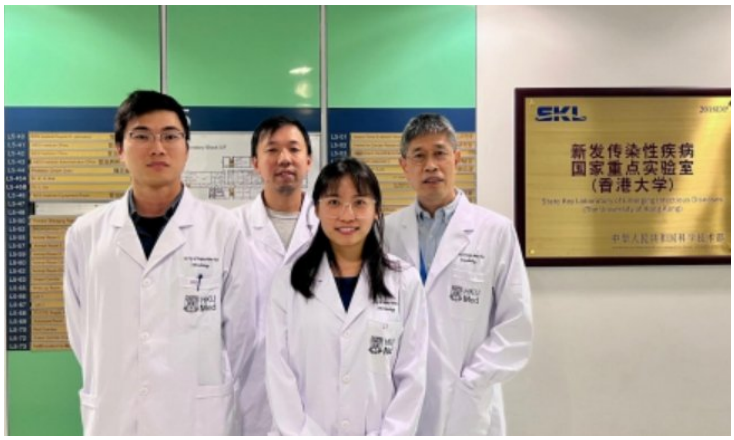
BioSpectrum
the business of Bio & Health Sciences
ASIA EDITION

Hong Kong develops nasal spray H5N1 avian influenza vaccine

April 4, 2025 | News

Further clinical trials could position this vaccine as a critical reserve for future H5N1 outbreaks



The State Key Laboratory for Emerging Infectious Diseases at the University of Hong Kong (HKU) and the InnoHK Centre for Virology, Vaccinology and Therapeutics (CVVT) have pioneered an influenza virus vector-based nasal spray vaccine platform and developed a nasal spray H5N1 avian influenza vaccine.

During the early COVID-19 pandemic, this platform enabled the rapid development of a nasal spray vaccine in collaboration with mainland China's Wantai BioPharm. After completing Phase 1-3 clinical trials, it was approved in 2022 as the world's first nasal spray COVID-19 vaccine.

To address the emerging H5N1 threat, the HKU and CVVT team utilised the influenza virus vector-based nasal spray vaccine platform to develop a nasal spray H5N1 avian influenza vaccine. Animal studies confirm its high safety profile and ability to induce comprehensive immunity, including neutralising antibodies, T-cell responses, and mucosal immunity in the upper respiratory tract.

Crucially, a single dose provides robust protection against infection and sustains immune memory. Further clinical trials could position this vaccine as a critical reserve for future H5N1 outbreaks, drastically shortening deployment timelines. Its nasal delivery mechanism also promises to curb viral transmission early in an outbreak.

This research was funded by the InnoHK initiative of the Innovation and Technology Commission of Hong Kong Special Administrative Region Government.