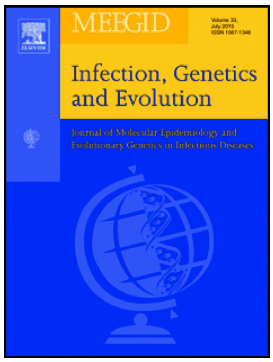

Emergence of novel reassortant H6N2 avian influenza viruses in ducks in India

Manoj Kumar, Shanmugasundaram Nagarajan, Harshad V. Murugkar, Barnalee Saikia, Bharati Singh, Amit Mishra, Sushil K. Tripathi, Sonam Agarwal, Shweta Shukla, Diwakar D. Kulkarni, Vijendra Pal Singh, Chakradhar Tosh

PII: S1567-1348(18)30092-3
DOI: doi:10.1016/j.meegid.2018.03.005
Reference: MEEGID 3440

To appear in: *Infection, Genetics and Evolution*

Received date: 29 November 2017
Revised date: 19 February 2018
Accepted date: 6 March 2018

Please cite this article as: Manoj Kumar, Shanmugasundaram Nagarajan, Harshad V. Murugkar, Barnalee Saikia, Bharati Singh, Amit Mishra, Sushil K. Tripathi, Sonam Agarwal, Shweta Shukla, Diwakar D. Kulkarni, Vijendra Pal Singh, Chakradhar Tosh , Emergence of novel reassortant H6N2 avian influenza viruses in ducks in India. The address for the corresponding author was captured as affiliation for all authors. Please check if appropriate. Meegid(2018), doi:10.1016/j.meegid.2018.03.005

Emergence of novel reassortant H6N2 avian influenza viruses in ducks in India

Manoj Kumar[#1], Shanmugasundaram Nagarajan[#1], Harshad V. Murugkar[1], Barnalee Saikia[2], Bharati Singh[1], Amit Mishra[1], Sushil K. Tripathi[1], Sonam Agarwal[1], Shweta Shukla[1], Diwakar D. Kulkarni[1], Vijendra Pal Singh, Chakradhar Tosh[1*]

[1]ICAR-National Institute of High Security Animal Diseases, Bhopal, India

[2]Northeastern Regional Disease Diagnostic Laboratory, Guwahati, India

[*]**Corresponding author at:** ICAR-National Institute of High Security Animal Diseases, Anand Nagar, Bhopal-462 022, India

e-mail address: chakradhar.tosh@gmail.com (Chakradhar Tosh)

[#] These authors contributed equally to this work.

Abstract

H6 subtype avian influenza viruses (AIV), established in terrestrial poultry, have jumped species barriers and caused human infection indicating pandemic potential of the virus. Here, we report isolation, and antigenic and genetic characterisation of two H6N2 viruses isolated from apparently healthy domestic ducks in Kerala and Assam, India during 2014 and 2015, respectively. Hemagglutination inhibition assay revealed antigenic divergence between the two isolates. This result was corroborated by amino acid differences at 55 positions (15.98%) between their hemagglutinin (HA) 1.The sequence analysis of the viruses indicated avian receptor specificity, avian origin, low pathogenicity to poultry and sensitivity to oseltamivir. However, Kerala14 had V27I mutation marker for amantadine resistance in M2. The Assam15 virus had an additional N-linked glycosylation on HA2 (position 557) compared to Kerala14 virus. Analysis of the HA gene re-