Highly Pathogenic Avian Influenza A(H5N8) Virus from Waterfowl, South Korea, 2014

To the Editor: To date, 18 hemagglutinin (HA) subtypes and 11 neuraminidase (NA) subtypes have been identified in influenza A viruses (1–4). Influenza A viruses containing HA subtypes 1–16 circulate in aquatic birds (1,2), whereas those harboring HA subtypes 17 and 18 are found in bats (3,4).

On January 18, 2014, the government of South Korea reported an outbreak of highly pathogenic avian influenza A(H5N8) virus in breeding ducks in the southern part of Jeollabuk-Do Province (5). More than 12 million poultry have since been culled, but the spread of the virus continues in duck and chicken farms. We report the genetic characterization of this virus.

On February 15, 2014, a total of 200 fecal samples were collected from waterfowl in the Pungse River in Chungnam Province, which is geographically close to Jeollabuk-Do Province. All samples were inoculated into hens’ eggs, and influenza A viruses were confirmed by PCR by using influenza A–specific nucleoprotein (NP) primers. We obtained 1 isolate, A/waterfowl/Korea/S005/2014 (H5N8), and sequenced the full regions of all 8 genes as described (6). These sequences were deposited into GenBank under accession nos. KJ511809–KJ511816.

We conducted a BLAST search (http://blast.ncbi.nlm.nih.gov/Blast.cgi, http://platform.gisaid.org/epli3/frontend/#4ead5c) to identify the closest gene sequences to those of A/waterfowl/Korea/S005/2014 (H5N8) (Table). Sequences for polymerase basic (PB) 2 (99% homology), HA (97% homology), and NP (99% homology) genes were closely related to those of A/wild duck/Shandong/

Address for correspondence: Kayoko Hayakawa, 1-21-1 Toyama, Shinjuku-ku, Tokyo, 162-8655, Japan; email: kayokohayakawa@gmail.com

References


South Korea. Fowl/Korea/S005/2014 (H5N8) may have been reassorted in a duck farm in South Korea. To our knowledge, no outbreak of this virus in poultry farms in China has been reported, and we found no previous reports in the literature that migratory birds could carry the virus. Taken together, our data suggest that A/waterfowl/Korea/S005/2014 (H5N8) may have been reasorted in a duck farm in South Korea.

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Keun Bon Ku,1 Eun Hye Park,1 Jung Yum,1 Ji An Kim, Seung Kyoo Oh, and Sang Heui Seo

Author affiliation: Chungnam National University College of Veterinary Medicine, Daejeon, South Korea

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References


Address for correspondence: Sang Heui Seo, Laboratory of Influenza Research, College of Veterinary Medicine, Institute of Influenza Virus, Chungnam National University, 220 Gung Dong, Yuseong Gu, Daejeon 305-764, South Korea; email: seos@cnu.ac.kr

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Table. Nucleotide homology of genes of influenza virus strain A/waterfowl/Korea/S005/2014 (H5N8) to the closest related influenza virus strains*

<table>
<thead>
<tr>
<th>Gene</th>
<th>Closest related virus strain</th>
<th>Nucleotide identity, %</th>
</tr>
</thead>
<tbody>
<tr>
<td>PB2</td>
<td>A/wild duck/Shandong/628/2011 (H5N1)</td>
<td>99</td>
</tr>
<tr>
<td>PB1</td>
<td>A/duck/Jiangsu/1-15/2011 (H4N2)</td>
<td>99</td>
</tr>
<tr>
<td>PA</td>
<td>A/duck/Jiangsu/1-15/2011 (H4N2)</td>
<td>98</td>
</tr>
<tr>
<td>HA</td>
<td>A/wild duck/Shandong/628/2011 (H5N1)</td>
<td>97</td>
</tr>
<tr>
<td>NP</td>
<td>A/wild duck/Shandong/1/2011 (H5N1)</td>
<td>99</td>
</tr>
<tr>
<td>NA</td>
<td>A/duck/Jiangsu/1203/2010 (H5N8)</td>
<td>98</td>
</tr>
<tr>
<td>M</td>
<td>A/duck/Jiangsu/1-15/2011 (H4N2)</td>
<td>99</td>
</tr>
<tr>
<td>NS</td>
<td>A/duck/Jiangsu/1-15/2011 (H4N2)</td>
<td>99</td>
</tr>
</tbody>
</table>

*PB, polymerase basic subunit; PA, polymerase acidic subunit; HA, hemagglutinin; NP, nucleoprotein; NA, neuraminidase; M, matrix; NS, nonstructural.