Identification of Avian Influenza Virus A/H5 *Clade* 2.3.2.1 in Asymptomatic-Ducks (*Anas species*) at a Live-Poultry Market in East Java, Indonesia

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***Abstract*—A total of 120 cloacal swab samples were collected from asymptomatic-ducks traded at a live-bird market in East Java-Indonesia during January to February 2017. After virus isolation using 10-days-old embryonated chicken eggs, hemagglutination activity was tested. TaqMan real-time reverse transcription (RT) polymerase chain reaction (PCR) assay was performed employing primer sets to differentiate HA genes of H5 clade 2.1.3 and clade 2.3.2.1. Our result show that Avian influenza virus (AIV)-A/H5 clade 2.3.2.1 was currently prevalent among ducks in a live-poultry market (LPM), indicating LPM could be an important place as an entry point of avian viruses to human resulting novel reassortant strain.**

Keywords—ducks; live-poultry market; AI-H5 clade 2.3.2.1, carrier, East Java Province-Indonesia

I. INTRODUCTION

The diversity of avian influenza virus (AIV) circulation in waterfowl reinforces the assumption that waterfowls have an important role in the spread of AIV to humans. Wild *Anseriformes*, are the most heterogeneous reservoirs and host of the influenza A virus. The A/H5N1 virus circulates in Indonesia since 2003 is clade 2.1.3 (Indonesian lineage), but by the end of 2012 many of death cases in ducks and waterfowl were found, it was assumed that it was caused by the A/H5N1 virus new clade 2.3.2.1 (Eurasian linege). The purpose of this study was to determine the avian influenza virus-A/H5 that currently circulates in ducks traded at a live-bird market in East Java, Indonesia.

II. MATERIALS AND METHODS

A total of 120 cloacal swab samples were collected from asymptomatic ducks during January to February 2017 at a live-bird market in East Java, Indonesia. Virus isolation were carried out by inoculating the swab samples into 10-days-old embryonated chicken eggs, and followed by hemagglutination assay. To detect the viral genomes, TaqMan real-time reverse transcription (RT) polymerase chain reaction (PCR) assay was performed employing primer sets that differentially detect A/H5 HA genes of clade 2.1.3 and clade 2.3.2.1. In order to confirm HA clades, hemagglutination inhibition (HI) test was conducted using two different anti-HA sera specific for the A/H5 clade 2.1.3 and clade 2.3.2.1 viruses.

III. RESULTS

The results showed that 29 (24%) samples were positive for hemagglutination activity and 6 (5%) of them were positive for the HA gene of clade 2.3.2.1 by RT-PCR. The HI tests indicated that these 6 isolates were A/H5 clade 2.3.2.1 viruses. Clade 2.1.3 virus was not detected by both RT-PCR and HI tests.

IV. CONCLUSION

The present study revealed that AIV-A/H5 clade 2.3.2.1 was currently prevalent among ducks in a live-poultry market where could be an important place as an entry point of avian viruses to human resulting novel reassortant strain.

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