ISOLATION AND MOLECULAR IDENTIFICATION CLADE 2.3.2.1 AVIAN INFLUENZA VIRUS H5 FROM DUCK (Anas species) SOLD AT LIVE BIRD MARKET USING TAQMAN PCR

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ABSTRACT

The purpose of this study was to know the avian influenza virus-H5 (AIV-H5) that circulates in ducks traded at live bird market (LBM) in Sepanjang, Subdistrict Taman of Sidoarjo, East Java Province Indonesia. A total of 120 cloacal swab samples were collected from ducks within four weeks in January to February 2017. The virus isolation was done by inoculation of cloacal swab sample into 10-day-old embryonated chicken eggs from a layer flock free of antibodies against AIV-H5, and followed by hemagglutination test (HA test). To detect the AIV-H5, TaqMan real-time reverse transcription (rRT) polymerase chain reaction (PCR) assay was performed using three different primer sets amplifying the AIV-H5N1 specific M, clade 2.1.3 specific HA, and clade 2.3.2.1 specific HA genes. For confirmation of the HA clade, hemagglutination inhibition (HI) test was done using two different anti HA sera specific for AIV-H5 clade 2.1.3 and clade 2.3.2.1 viruses. The results showed that 29 (24%) samples were positive for hemagglutination activity and 6 (5%) were both positive for the AIV-H5N1 M and clade 2.3.2.1 HA genes by rRT-PCR. These 6 samples were confirmed to be AIV-H5 clade 2.3.2.1 virus by the HI test. The AIV-H5 of HA clade 2.1.3 was not detected by both PCR and HI tests. It was revealed that AIV-H5 clade 2.3.2.1 was circulating among ducks in East Java where could be an important place as an entry point of reassortment resulting new avian influenza viruses.

Keywords: ducks, live bird market, AIV H5 clade 2.3.2.1, carrier, East Java Province-Indonesia