

## Evaluation of Killed Avian Influenza Vaccine Against Current Isolates in Chickens by Virus Isolation and RT\_ PCR

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**Background & Objectives:** Influenza virus type A was infected humans and different types of birds. In Iran the first H9N2 low pathogenic avian influenza (LPAI) outbreak occurred in 1998. The infection caused appreciable economic losses in the poultry industry. Vaccines have been used in avian influenza control programs to prevent or eradicate (AI) from poultry. Vaccination of chickens with killed oil-emulsion vaccines prevent clinical signs and increase resistance to infection. In this study describes evaluation of killed avian influenza vaccine against current isolates in chickens by virus isolation and RT\_ PCR.

**Methods:** Forty broiler chickens were vaccinated with killed oil-emulsion influenza vaccine that was obtained from Razi vaccine and serum research institute. Ten chickens used as control group (None vaccinated group). 2 weeks post vaccination, all groups were challenged with 4 H9N2 isolates that obtained from broiler chickens in Shiraz. Cloacal and tracheal swab samples were collected from chickens at 1,3,5,7,9,11 days post infection and processed for virus isolation and RT-PCR. Each sample was inoculated into allantoic fluid of 9 to 11-day-old embryonated eggs. Allantoic fluids were tested for hemagglutination (HA) activity after 72h incubation in 37°C. For positive samples by virus isolation, RT-PCR was carried out by amplification of 488 bp of HA gene of viruses.

**Results:** The results of virus isolation in vaccinated and control groups showed shedding virus from tracheal and cloacal swabs in vaccinated groups were decreased at 5 day post challenge (pc), but shedding in control group continue on day 11 pc. According to RT-PCR results, nucleic acid of influenza A virus H9 subtype was detected from samples that positive by virus isolation.

**Conclusion:** The results suggested that the killed oil-emulsion influenza vaccine can efficiently decrease AI replication and shedding in broiler chickens.

**Keywords:** Avian Influenza; Vaccine; Virus Isolation