***The isolation and molecular identification of avian influenza virus and its cytopathic effect on tumor cell lines in vitro***

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**Summary**

This study includes isolation of Avian Influenza virus H9N2 from diseased samples collected from flocks of broiler and layer chicken .These chickens suffered from respiratory and digestive infection or drop in egg production .

Embryonated chicken eggs 9-11 days old were used for virus isolation and propagation. Allantoic sac was used for both isolation and propagation of AIV .The virus was detected in the harvested fluid after 72 hours of inoculation by using of hemagglutination of chicken red blood cell as primary diagnostic method ,but viral typing and sub typing were determined through using reference antisera in inhibition test and RT-PCR test to confirm identification of virus .

The virus was detected directly from nosrial, trechiel and cloacal swab or by propagation in allantoic sac by using rapid test kit (Anigen) .AIV was detected in serum samples collected from chickens flocks for both egg and meat production by using HI and ELISA test .

Chick embryo fibroblasts (CEF) culture was able to propagate AIV after treatment of the virus with trypsin ,cytopathogenic effect CPE was noticed first at 48hrs. Assay of results of virus in inoculation showed that the infectivity titer of infectious allantoic fluid (EID50) was 109/ml per ml .The viruse was found showed 105.5/ml (TCID50) per ml in chicken embryo fibrblast .

Results of pathogenicity test showed that the virus infection resulted in (MDT) 72hrs. an intracerebral pathogenicity index (ICPI) of 0.13 and intravenous pathogenicity indexes of 0.3 were found in the chicken .hemadsorption test provide that the virus can be successfully propgated in CEF cells. AIV envelop antigen (HA) was separated after virus purification by using gel filtration chromatography method and the molecular weight of AIV hamaggltinin was determined 60255Dalton .

Monolayer tissue culture of infected CEF with AIV was examined by indirect immunoperoxidase to study the cytopathogenic effect of the virus. Study the cytotoxic activity of AIV in various tumor cell lines (HEP2,AMN3and Giloblastoma) revealed a clear cytotoxic activity of AIV in first and second cell lines .