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Contamination rate of Avian Leukosis viruses among commercial Marek's Disease vaccines in Assiut,Egypt market using Reverse Transcriptase-Polymerase Chain Reaction

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Abstract

Avian leukosis viruses (ALVs) in poultry may induce a variety of deleterious effects including tumors, increased mortalities, growth retardation and decrease in egg size and production that led to considerable economic losses. The identification of avian leukosis viruses (ALVs) in imported Marek's disease (MD) vaccines has raised concern about transmission of these retroviruses to vaccine recipients esp. poultry breeding stocks, so Egypt as one of importing countries requires freedom of infection with ALVs in such vaccines. Subgroup specific RT-PCR was undertaken on isolated RNA from 13 obtained commercial MD vaccines using six pairs of primers that correspond to envelope glycoprotein gene (gp85) which determines possible contamination with the six ALV subgroups: A, B, C, D, E, and J. The results indicated that RT-PCR assay for ALV-gp85 subgroup-E was positive for eight out of thirteen (61.5%) tested MD vaccines, while primers designed to detect subgroup A and J ALVs were positive for five out of thirteen (38.5%) and two out of thirteen (7.7%) respectively among examined vaccines. No ALVs was detected in 3/13 (23.07%) of commercially examined vaccines by using any of six primer pairs. Finally, the using of RT-PCR assay provides us a new, sensitive approach for identifying ALVs as a contaminant agent that will help greatly in applying this method for equipped labs as a quality control measure for testing delivered MD vaccines before its administration in poultry breeding stocks as well eradication programs through identifying infected birds.

Key words: Marek's disease, vaccine contamination, avian leukosis virus, RT-PCR