

## Isolation and Molecular Detection of Marek's Disease Virus from Outbreak Cases in Chicken in South Western Ethiopia

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**Abstract :** Background: Marek's disease virus is a devastating infection, causing high morbidity and mortality in chickens in Ethiopia. Methods: The current study was conducted from March to November, 2021 with the general objective of performing antemortem and postmortem, isolation, and molecular detection of Marek's disease virus from outbreak cases in southwestern Ethiopia. Accordingly, based on outbreak information reported from the study sites namely, Bedelle, Yayo, and Bonga towns in southwestern Ethiopia, 50 sick chickens were sampled. The backyard and intensive farming systems of chickens were included in the sampling and priorities were given for chickens that showed clinical signs that are characteristics of Marek's disease. Results: By clinical examinations, paralysis of legs and wings, gray eye, loss of weight, difficulty in breathing, and depression were recorded on all chickens sampled for this study and death of diseased chickens was observed. In addition, enlargement of the spleen and gross lesions of the liver and heart were recorded during postmortem examination. The death of infected chickens was observed in both vaccinated and non-vaccinated flocks. Out of 50 pooled feather follicle samples, Marek's disease virus was isolated from 14/50 (28%) by cell culture method and out of six tissue samples, the virus was isolated from 5/6(83.30%). By Real time polymerization chain reaction technique, which was targeted to detect the Meq gene, Marek's disease virus was detected from 18/50 feather follicles which accounts for 36% of sampled chickens. Conclusion: In general, the current study showed that the circulating Marek's disease virus in southwestern Ethiopia was caused by the oncogenic Gallid herpesvirus-2 (Serotype-1). Further research on molecular characterization of revolving virus in current and other regions is recommended for effective control of the disease through vaccination.

**Keywords :** Ethioi, Marek's disease, isolation, molecular

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