

Genetic Characterization of Contagious Pustular Dermatitis Virus in Goats in Sri Lanka

*Piratheepan¹, S., Puvanendiran², S., Perera³, E.R.K. and Sivakumar⁴, T.

¹Department of Animal Science, University of Jaffna, Sri Lanka

²Animal Virus Laboratory, Veterinary Research Institute, Kandy

³Department of Animal Science, University of Peradeniya, Sri Lanka

⁴Obihiro University of Agriculture and Veterinary Medicine, Japan

*Corresponding E-mail: thansihpiratheepan@gamil.com

Contagious Pustular Dermatitis (CPD), also known as Orf, is a zoonotic disease in small ruminants. Contagious Pustular Dermatitis virus is an epitheliotropic DNA virus belongs to the Genus Parapoxvirus DNA virus poxviridae family. CPD is characterized by papules and pustules found on and around muzzle, mouth and nose and develop into thick scabs. Although CPD has been reported from all over Sri Lanka, the incidence is high in North Central, Northern and Eastern provinces. The CPD causes significant economic losses in livestock farming. There is no vaccine available for pre-immunization. The objective of the study is to genetically characterize the CPD virus from goats in Sri Lanka to select suitable CPDV strain as a vaccine candidate. Scab samples were collected in 50 % glycerol phosphate saline from 92 infected animals from the following districts; Vavuniya, Trincomalee, Anuradhapura, Jaffna, Mannar, Kilinochchi and Kandy. The DNA extracted from these scab samples were subjected to a *B2L* gene-based PCR assay to detect CPDV using a set of forward (ORF2F; 5'-CGAACTTCCACCTCAACCACTCC-3') and (ORF2R; 5'-CCTTGACGACGATGTCGCCCTTCT-3') reverse primers. Of 92 DNA samples, 86 were positive for CPDV DNA. Subsequently, a 507-bp *B2L* gene fragments amplified from ten CPDV positive samples from Vavuniya, Trincomalee, Anuradhapura, Jaffna, Kilinochchi and Kandy were sequenced. The newly generated *B2L* gene sequences shared 99 % identity among them. These sequences shared 98 – 99 % identity scores with the *B2L* gene sequences isolated in several other countries, including India, Malaysia and China. In agreement with the sequencing analyses, the Sri Lankan *B2L* gene sequences clustered together with the known CPDV *B2L* gene sequences in phylogeny. In addition to reporting the first genetic characterization of CPDV in Sri Lanka, the present study suggests that one of the CPDV strains isolated in Sri Lanka could be a potential vaccine candidate, as the *B2L* gene was conserved among Sri Lankan isolates.

Key words: *B2L* gene, CPD, genetic characterization, goats, Sri Lanka