

## Serologic Survey of Rabies Virus, Canine Distemper Virus and Parvovirus in Wild Raccoon Dogs (*Nyctereutes procyonoides koreensis*) in Korea

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Oral rabies vaccination (ORV) program for the wild animals in rabies risk regions of Korea has been conducted since 2000. Evaluation of ORV program under field condition and information concerning the incidence of exposure to canine distemper and canine parvovirus (CPV) are needed in wild raccoon dogs (*Nyctereutes procyonoides koreensis*). Ninety four sera of wild raccoon dogs were screened for antibodies against rabies, canine distemper virus (CDV) and CPV in Korea. The overall prevalence of antibodies against rabies virus (RABV), CDV and CPV in wild raccoon dogs was 35.1%, 89.4% and 24.5%, respectively. Comparisons of sero-prevalences of RABV, CDV and CPV were assayed in two regions (Gyeonggi-do and Gangwon-do). The Gyeonggi-do (36.4%) showed higher sero-positive rate against CPV than Gangwon-do (20.8%). In contrast, Gangwon-do (41.7% and 97.2%) showed higher sero-positive rates against RABV and CDV than Gyeonggi-do (13.6% and 63.6%). These results indicate that there was severe circulation of CDV and CPV among wild raccoon dogs in the two regions of Korea. Furthermore, raccoon dogs showing a protective antibody titer (0.5 IU/ml) were 15.9%, suggesting that new rabies control program such as trap-vaccination-release (TVR) should be launched urgently in rabies risk regions.

**Key Words:** Raccoon dogs, RABV, CDV, CPV, Serosurveillance

### INTRODUCTION

The wild raccoon dogs (*Nyctereutes procyonoides koreensis*) have contributed to the main vector and reservoir for rabies in Europe, northern Asia and Americas and rabies cases in raccoon dogs have increased in North-eastern Europe (1). The raccoon dogs were introduced to Korea from Russia for the production of fur and pelts in the late 1920s. As fur farms for silver foxes and goats were

prosperous in Asian countries, Korean raccoon dog's industry had lessened rapidly. The raccoon dogs residing in fur farms had escaped and became wild animals in Korea (2). The lack of natural predators of raccoon dogs has increased the population density of raccoon dogs and potential for transmission of disease between domestic carnivores and wild raccoon dogs if they contact infected carnivores (3, 4).

Rabies virus (RABV) belonging to the genus *Lyssavirus* of the family *Rhabdoviridae* causes a fatal disease in animals

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