DISTRIBUTION OF ANTIBODIES IN DOGS AGAINST ADENO-ASSOCIATED SATELLITE VIRUS ASSOCIATED WITH INFECTIOUS CANINE HEPATITIS VIRUS AND SEROLOGICAL TYPING OF THE SATELLITE VIRUS

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An adeno-associated satellite virus (ASV) associated with infectious canine hepatitis virus (ICHV) was found in this laboratory in 1968. This strain of ASV designated as M is the only ASV associated with ICHV. In the present paper, distribution of antibodies against ASV strain M is presented by the complement fixation (CF) test.

1) An attempt was first made to increase the yield of strain M. For this purpose, strain Matsuda with a high infectivity titer of ICHV was obtained by three times applying a limiting dilution experiment and was mixed with the original strain Matsuda, containing strain M, and inoculated into a dog kidney cell culture. The resultant viral material contained more ASV particles than the original strain Matsuda.

2) About 10-1 of strain M material thus obtained was finally concentrated and purified by banding three times in isopycnic ultracentrifugation in CsCl gradient. The purified strain M did not react with anti-ICHV dog serum but reacted with the antisera against strain Matsuda containing strain M. The anti-strain M serum was prepared by inoculating the purified strain M into guinea pigs.

3) Distribution of antibodies to the strain M in dogs was then examined. Eighty-four dog sera collected in Sapporo were titrated, beginning at 1 : 2 dilution, by CF test (microtiter technique) using 4 units of the antigen of strain M. Eight out of 38 new-born puppies (less than 10 days-old) were positive, none out of 7 young puppies (about a month-old), and 14 out of 39 adult dogs were positive. A total of 26.2% of the dogs possessed antibodies against strain M. Antibodies against ICHV were found in 17 out of 38 new-born dogs, in none out of 7 puppies, and in 16 out of 39 adult dogs. ICHV antibody was found in 72.7% of the dog sera possessing the strain M antibody. The antibody titer against strain M was usually lower than that of ICHV. From these findings, it is presumed that natural infection of strain M among dogs is possible and, in such cases, multiplication of the ASV in dogs will require coinfection of ICHV.