

ネコ糞便内ロタウイルスの検出

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Detection of Rotaviruses in Cat Feces

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Rotavirus is widely recognized as the major causative agent of gastroenteritis in the young of many mammalian and avian species. However, only a few evidences exhibiting the interrelationship of cats and rotaviruses have been reported so far [1-3, 8, 9], and the pathogenetic significance of rotavirus in the alimentary tract of cats may be considered to be rather little. We have already reported the serological evidence which indicates the widespread rotavirus infection of cats in the South-Kyushu area [6]. This brief communication describes the first demonstration of rotaviruses in the cats in Japan.

One hundred and one cat feces were collected for a 9 month period from September, 1985 to May, 1986: 13 specimens were diarrheal and 88 specimens were normal. All specimens were first screened by a commercial reverse passive hemagglutination (RPHA) test kit for detection of human rotaviruses (ROTA-CELL: Nissui Seiyaku Co. Ltd.). Three specimens were positive according to the kit manual. Those were normal feces derived from a litter of healthy household kittens which were about 1 month old. Two had the RPHA titer of 1:640 (Case Nos. 2-2 and 10) and the titer higher than 1:1,280 was recorded in the other (Case No. 11). Neither parvovirus nor cytopathic effect producing agent was detected in these specimens by the fecal hemagglutination (HA) and HA-inhibition tests [4], and by the general virus isolation technique with Crandell feline kidney (CRFK) cells, respectively.

The methods for preparation of 10% (w/v) suspension of fecal material, electron microscopy (EM) and virus isolation in cell cultures were the same as those described previously [5, 7]. A good many rotavirus-like single- and double-shelled particles were observed in the specimens by EM. The average diameters of the single- and double-shelled particles were about 65 nm and 75 nm, respectively. Fig. 1 shows the double-shelled particles observed in the Case No. 10. No other

virus or virus-like particles were detected in the Case Nos. 10 and 11, but a few round virus-like particles, about 25 nm of diameter, were detected in the Case No. 2-2 in addition to the rotavirus-like particles. These small particles were not aggregated in the immune-EM (IEM) with an antiserum against canine parvovirus described previously [4].

The method of IEM with an immune serum against the Lincoln strain of bovine rotavirus was described previously [5]. Rotavirus-like particles, especially the single-shelled particles were aggregated by the antiserum as shown in Fig. 2.

The virus isolation in the cell cultures was performed by using cell lines of a fetal rhesus monkey kidney (MA 104), CRFK, feline lung and feline embryonic fibroblast, and primary feline kidney cells. Contrary to expectation, rotavirus was not isolated from any specimens by the methods which were adequate for isolation of

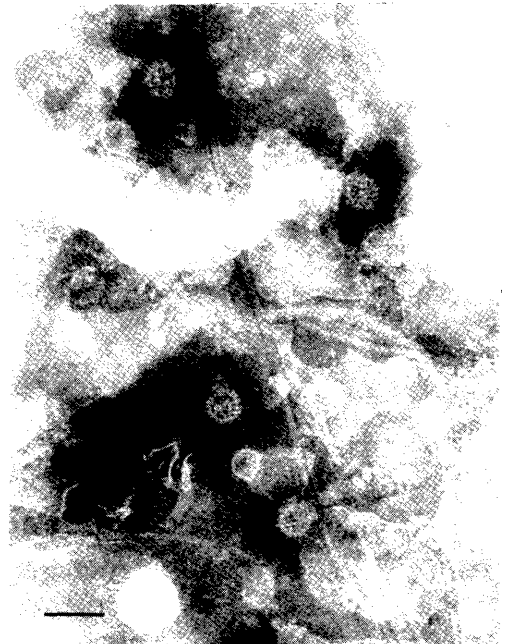


Fig. 1. Double-shelled rotavirus particles observed in the Case No. 10 fecal specimen. Bar=100 nm.

a canine rotavirus [5]. Further trials with some device may need for *in vitro* culture of the fastidious agent.

The definitive identification could not be achieved since the virus was not recovered in the cell culture, however, the evidence presented in this communication indicates that cats, as well as dogs [5], are one of the rotavirus reservoirs in Japan and it is a noteworthy fact in respect of zoonotic implication.

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Fig. 2. Aggregation of particles in the Case No. 10 fecal specimen after the reaction with anti-Lincoln strain of bovine rotavirus immune serum. Bar=100 nm.

要 約

ネコ糞便内ロタウイルスの検出 (短報): 望月雅美・山川 睦 (鹿児島大学農学部家畜微生物学講座)——101例のネコ糞便をヒトロタウイルス検出用逆受身血球凝集反応キットで検査した結果, 同腹の健康仔ネコ由来の3例が陽性を示し, 糞便内には多数のロタウイルス様粒子が観察され, 超微構造的特徴と抗牛ロタウイルス血清を用いた免疫電子顕微鏡法によりロタウイルスと考えられた。細胞培養によりウイルスは分離できなかった。