LETTER TO THE EDITOR

CONTRIBUTION TO THE PROBLEM OF INFECTION OF HUMANS WITH A MURINE GAMMAHERPESVIRUS

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In 1980, a new herpesvirus has been isolated from the rodents *Apodemus flavicollis* and *Clethrionomys glareolus* in Slovakia (*1*). This virus, designated Murid herpesvirus 4 or Mouse herpesvirus strain 68 (MHV-68), was later assigned to the subfamily *Gammaherpesvirinae*, the genus *Rhadinovirus*, the species *Murid herpesvirus 4* (*2, 3*).

MHV-68 is phylogenetically related to Kaposi's sarcoma-associated herpesvirus (KSHV) and Epstein-Barr virus (EBV) (*4*). Its transmission through excrements, urine and saliva by air is similar to that of hantaviruses, dangerous human pathogens occuring in rodents too (*5*).

About 10% of rodent sera collected in former Czechoslovakia tested were positive for MHV-68 antibodies. The positivity of rodents' sera varied depending on the locality and the kind of rodent. Among rodents, the antibodies were most frequent in *Apodemus flavicollis* (34.9%). The antibodies were found also in other animals living with rodents in common biotopes, namely in fallow deer (*Dama dama*) (50%), wild bears (*Sur scrofa*) (28%) and sheep (15%). On the other hand, pheasants (*Phasionus colchicus*) and muflons (*Ovis mosimor*) were negative (*5–7*).

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Abbreviations: EBV = Epstein-Barr virus; HCMV = Human cytomegalovirus; HSV-1 = Herpes simplex virus 1; KSHV = Kaposi's sarcoma-associated herpesvirus; MHV-68 = Mouse herpesvirus strain 68; VNT = virus-neutralization test

Most noteworthy, such antibodies were also detected in sera from humans, namely laboratory personnel working with this virus for about 20 years and workers professionally exposed to small rodents (*5*). Eight of 20 employees of the Institute of Virology, Slovak Academy of Sciences and the Department of Microbiology and Virology, Faculty of Natural Sciences, Comenius University working with MHV-68 had serum antibodies to this virus (40%), as assayed by virus-neutralization test (VNT, titers of 4–32) and ELISA (titers of 1000) (*5*).

The aim of this work was to search for serum MHV-68 antibodies in persons not coming professionally in contact with wild rodents. For this purpose, samples of 330 sera from patients with various diagnoses from the General Hospital in Žilina, Slovakia, were tested by VNT (*5*), which is generally considered the most specific test for antibodies, and ELISA (*9*). The sera were stored at -20°C and inactivated at 56°C for 30 mins before use. MHV-68 was propagated in VERO cell cultures and concentrated and purified by ultracentrifugation as described previously (*8*). In VNT, a positive control consisted of the serum from a person working with MHV-68 in laboratory for 27 years.

The results of the testing of the sera by VNT are shown in the table. MHV-68 antibodies were found in 53 out of 330 sera (16%) in titers of 4–128. All the sera positive by VNT were also positive by ELISA, the latter titers ranging from 6,400 to 102,400 (data not shown). As controls of possible cross-reactivity, sera from patients with EBV, Human cytomegalovirus (HCMV) and Herpes simplex

Patients' sera, total	VNT titer of MHV-68 antibodies
4	128
5	32
8	16
19	8
17	4
277	<4
Control sera (total)	
EBV-positive sera (3)	<4
HSV-1-positive sera (2)	<4
HCMV-positive sera (5)	<4

virus 1 (HSV-1) diagnoses were included. As these sera were negative by VNT, they indicated that there was no antigenic relatedness between MHV-68 and respective viruses.

The finding of MHV-68 antibodies in the sera of persons not exposed to MHV-68 infection indicates that this virus may circulate between two different species, rodents and humans, and could be epidemiologicaly and medicaly important, especially regarding the knowledge that it infects human cell lines and transforms human B lymphocytes *in vitro*.

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