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CAIRO, U.A.R.

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Study of the role played by migratory birds in distribution of arboviruses belonging to the tickborne encephalitis complex is impossible without differentiation of the separate components of this group.

The object of our task was to study, by means of the hemagglutination inhibition kinetic reaction, the Omsk hemorrhagic fever (OHF) strains isolated from different materials in western Siberia.

A total of 8 strains was examined (see Table), of these strains No. 39, 352 and 355 were isolated from Dermacentor pictus ticks in an OHF focus in 1962, strain No. 7... was obtained from the brain of a muskrat trapped in Novosibirsk Oblast in 1963, and strains M and I were isolated from the blood of patients ill with OHF. Strains of "Sof'in" tickborne encephalitis and Kyasanur Forest disease 9605 were compared.

For these strains, immune sera were prepared in white rats by means of immunization with the brain of newborn rats.

Antigens were made from brains of infected adult white mice weighing 7-8 g. Viruses were isolated by means of borate-buffer solution pH 9 in the course of 24 hours and were later freed from nonviral protein by means of protamine-sulfate and centrifugation at 11,000 rpm. Each antigen was verified with different pH zones and its titer established. In the basic test, almost all antigens were examined with the same pH zone. The titer of experimental sera with hemoglobin antigens was preliminarily determined in hemagglutination reaction at 4°C in the course of 18 hours. The sera titers were in a solution corresponding to 1:640-1:280.

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* Omsk Scientific Research Institute of Natural Focal Infections, Ministry of Health RSFSR.

In hemagglutination inhibition kinetic reaction, a twice-diluted serum was mixed with 64, 32, 8, 4, and 2 hemagglutinating units of the corresponding antigen. The reaction was made at room temperature. The periods of interaction of serum and antigen were 30 minutes and 2 and 18 hours. Prior to the main test, the required numbers (2, 4, 8, 16, 32, and 64) of hemagglutinating antigen units were titered. The series of diluted experimental sera solutions were prepared in advance for the whole test and were kept in refrigerator.

The interaction between the serum and antigen in the course of 30 minutes was best to reveal the differences between CHF and TE strains. All CHF strains differed from TE "Sof'in" strain, the serum of which contained 32 AE of homologous antigen, whereas the same serum neutralized 0-4-8 AE of CHF strains, i.e. 2-4-8 times less. The sera to CHF strains neutralized 8-32 AE of homologous antigen and antigens from CHF strains, whereas they contained 0-4-8 AE of "Sof'in" antigen, i.e. 4-8-16 times less than the CHF strain.

The Kyasanur Forest disease virus showed a unilateral difference.

The difference between TE and CHF strains was irregular in the course of 2 hour interaction between antigens and sera. The differentiation of TE, CHF, and KFD strains was unsuccessful in the course of 18 hours interaction of these ingredients.

Simultaneously with hemagglutination inhibition kinetic reaction, we studied 9 strains isolated from a bird brain in the tickborne encephalitis focus in Togushinsky region (Novosibirsk Oblast). Their examination was carried out with well known sera to TE "Sof'in" and CHF "Goloshubina", and KFD (9605) strains. From results of the hemagglutination inhibiting kinetic reaction, each strain is related to TE virus.

Number of antigen units neutralized in different sera solutions in hemagglutination inhibition reaction during 30 minutes.

Titer		Strains							
		"Sof'in"	352	39	355	M	739	I	KFD
"Sof'in	1:80	16	4	32	16	16	16	8	32
	1:160	16		8	4	8	8	4	16
	1:320	8							8
	1:640								
	1:1280								
39	1:80	32	8	32	8	32	32		64
	1:160	8	4	32	4	32	16		32
	1:320			4		4	4		8
	1:640								
	1:1280								
M	1:80	4	4	16	4	16	16	8	8
	1:160			4		8	4	4	4
	1:320					4			
	1:640								
	1:1280								
739	1:40	0	4	32	8	32	16	32	16
	1:80			8	4	8	8	4	4
	1:160			4		4	4		
	1:320								
	1:640								
I	1:80	4	4	32	4	32	32	16	16
	1:160			4		16	32	8	4
	1:320					4	16	4	
	1:640								
"Golo-shubin"	1:40	8	8	32	8	32	32		8
	1:80		4	8	4	16	16		4
	1:160						4		
	1:320								
	1:640								
KFD	1:40	8	4	16	8	8			16
	1:80			4	4	4			8
	1:160								4
	1:320								
	1:640								