

Virus Name: Tribec		Abbreviation: TRBV
Status Probable Arbovirus	Select Agent No	SALS Level 2
SALS Basis Results of SALS surveys and information from the Catalogue.		
Other Information		
Antigenic Group Kemerovo		

SECTION I - Full Virus Name and Prototype Number

Prototype Strain Number / Designation	Accession Number	Original Date Submitted 5/31/1984
Family Reoviridae	Genus Orbivirus	
Information From M. Gresikova	Address Institute of Virology, Bratislava, Czechoslovakia	
Information Footnote Revised		

Section II - Original Source

Isolated By (name) Gresikova, M. (1)	Isolated at Institute Bratislava, Czechoslovakia	
Host Genus Ixodes ricinus	Species	Host Age/Stage Nymphs
Sex Not Answered		
<u>Isolated From</u>	<u>Isolation Details</u>	
Signs and Symptoms of Illness	Arthropod Engorged	
Time Held Alive before Inoculation		
Collection Method Flagged off vegetation with white woolen blanket	Collection Date 4/25/1963	
Place Collected (Minimum of City, State, Country) Tribec Mountains (SW Slovakia), Czechoslovakia		
Latitude 48° 28' N	Longitude 18° 15' E	
Macrohabitat Mixed oak-woods	Microhabitat Undergrowth on the wood	Method of Storage until Inoculated Ticks held at 4dC
Footnotes		

Section III - Method of Isolation

Inoculation Date
5/16/1963

Animal (Details will be in Section 6)
nb mice

Route Inoculated Intracerebral	Reisolation Yes
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Other Reasons

Homologous Antibody Formation by Source Animal

Test(s) Used

Footnotes

Section IV - Virus Properties

Physicochemical
RNA, Double Strand

Pieces (number of genome segments) 10	Infectivity	Sedimentation Coefficients(s) (S)
Percentage wt, of Virion Protein	Lipid	Carbohydrate
Virion Polypeptides: Number	Details	
Non-virion Polypeptides: Number	Details	
Virion Density 1.16 gm/ml (5)	Sedimentation Coefficients(s) (S)	
Nucleocapsid Density	Sedimentation Coefficients(s) (S)	

Stability of Infectivity (effects)

pH (infective range)
Optimum stability of infectivity at pH 7-8 (7)

Lipid Solvent (ether - % used to test)	After Treatment Titer 8.0 dex	Control Titer 8.5 dex
Lipid Solvent (chloroform)	After Treatment Titer	Control Titer
Lipid Solvent (deoxycholate)	After Treatment Titer 4.0 dex	Control Titer 6.5 dex

Other (formalin, radiation)
Relatively resistant to lipid solvents, deoxycholate (18)

Virion Morphology

Shape Icosahedral (17)	Dimensions 70-75 nm	
Mean 64 + - 4 nmnm	Range nm	
Measurement Method Electron microscopy (5)	Surface Projections/Envelope No envelope present (17)	Nucleocapsid Dimensions, Symmetry

Morphogenesis

Site of Constituent Formation in Cell	Site of Virion Assembly	Site of Virion Accumulation
Inclusion Bodies	Other	

Hemagglutination

Hemagglutination No(2)	Antigen Source SMB ext. by sucrose-acetone	Erythrocytes (species used) Goose
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pH Range 6.0-6.8	pH Optimum
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Temperature Range	Temperature Optimum
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Remarks

Serologic Methods Recommended
CF, NT

Footnotes

No positive reactions by NT were found to following viruses: Tickborne encephalitis, western and eastern equine encephalomyelitis, St. Louis and Japanese encephalitis viruses [2] .

No positive reactions by CF tests were found to following viruses: Sindbis, Semliki Forest, West Nile, and yellow fever.

Tribec virus is distinct from Kemerovo virus [2] , [4] .

Dr. J. Casals, at the Rockefeller Foundation Virus Laboratory, has compared Tribec virus with Kemerovo virus by neutralization and complement-fixation tests.

Results of neutralization tests				
Serum	Tribec		Kemerovo	
	Dex LD50	LNI	Dex LD50	LNI
Tribec	3.8	4.0	4.5	0.3
Kemerovo	7.5	0.3	1.5	3.3
Normal	7.8		4.8	

Results of Complement-fixation tests			
Antibody	Antigen		
	Tribec	Kemerovo	Normal
Tribec	64/64	0	0
Kemerovo	0	128/16	0

0 = <4/<4

Section VI - Biologic Characteristics

Virus Source (all VERTEBRATE isolates)

Lab Methods of Virus Recovery (ALL ISOLATIONS)
newborn mice

Cell system (a)	Virus passage history (b)	Evidence of Infection						
		CPE			PLAQUES			Growth Without CPE +/- (g)
		Day (c)	Extent (d)	Titer TCD50/ml (e)	Day (c)	Size (f)	Titer PFU/ml (e)	
Chick embryo (PC)	Several	2	CPE	8.5*	2-3	distinct	6*(9)	
L cells (CL)	Several	20 hr.	CPE, IFA antigen	8.2 (10)				
Hyalomma dromedarii (CL)	Several	2-7	IFA antigen	4.0 (11)				
Vero (CL)	P-14				6	1 mm	6.8 (16)	
LLC-MK2 (CL)					6	1 mm	>7.7 (16)	

* Expressed in dex

Vertebrate (species and organ) and arthropod	No. isolations/No. tested	No. with antibody/No. tested Test used	Country and region
Ixodes ricinus	9/3,719		Tribec region, Slovakia, CZ (1)
Clethrionomys glareolus (red-back mouse)	1/2		
Pitymys subterraneus (pine mouse)	1/7		
Sentinel goats	2	2/14 NT	Tribec region, Slovakia, CZ (8)
Cattle		4-31%	Tribec region, Slovakia, CZ (19)
Goats		2.5-5.5%	
Man		3%	Tribec region, Slovakia, CZ (1)
Ixodes ricinus	7/3,348		Central and northern Italy (20)
Ixodes ricinus	1		Belorussian SSR, USSR, 1973 (21)

Experimental host and age	Passage history and strain	Inoculation Route-Dose	Evidence of infection	AST (days)	Titer log ₁₀ /ml
Mice (nb)	CE 3, SM 1	ic 0.02	Encephalitis, death (13)		5.5
Mice (nb)		ip			
Mice (nb)		sc			
Mice (wn)		ic 0.03	Antibodies		
Mice (wn)		ip			
Mice (nb)	CE 3, SM 9, rats 3	ic 0.02	Encephalitis, death		8.5
hamsters (nb)		ic 0.03	Encephalitis, death		
rats (nb)		ic 0.03	Encephalitis, death		
rhesus monkey	CE 3, P-21	ic 0.5	Pleocytosis, meningitis, virus isolation (12)		
chick embryo		ys 0.1	Death		

Section IX - Experimental Arthropod Infection and Transmission

Arthropod species & virus source(a)	Method of Infection log10/ml (b)		Incubation period (c)		Transmission by bite (d)		Assay of arthropod, log10/ml (e)		
	Feeding	Injected	Days	°C	Host	Ratio	Whole	Organ	System
Ixodes ricinus		X					X		Suckling mice
Dermacentor marginatus		X					X		Suckling mice

Tribec virus persisted in parenterally inoculated half-engorged female Ixodes ricinus (above) for 22 days, and in parenterally inoculated half-engorged female Dermacentor marginatus (above) for 43 days.

Section X - Histopathology

Character of lesions (specify host)

Infiltrates of polynuclear leukocytes in leptomeninges; polynuclear and mononuclear infiltrates in subcortical gray matter and in the walls of the ventriculi. Meningoencephalitis acuta.

Inclusion Bodies

Intranuclear

Organs/Tissues Affected

Category of tropism

Section XI - Human Disease

In Nature	Residual	Death
Subclinical	Overt Disease	
Clinical Manifestations		
Number of Cases	Category (i.e. febrile illness, etc.)	

Section XII - Geographic Distribution

Known (Virus detected)

Czechoslovakia (14), Rumania (15), Italy (20), USSR (21)

Suspected (Antibody only detected)

Section XIII - References

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Remarks