Virus Name: Hanzalova	Abbreviation: HANV

Status
Arbovirus

Select Agent
No

SALS Level
4

SALS Basis
Placed in Level 4 based on the close antigenic relationship with a known Level 4 agent, Russian spring-summer encephalitis, plus insufficient laboratory experience.

Other Information
Vaccination Recommended

Antigenic Group
B

SECTION I - Full Virus Name and Prototype Number

Prototype Strain Number / Designation
Czechoslovak tick-borne encephalitis

Accession Number

Original Date Submitted
2/13/1985

Family
Flaviviridae

Genus
Flavivirus

Information From
Dr. J. Rampas, Dr. J. Kolman

Address
Institute of Epidemiology and Microbiology, Srobarova 48, Prague10

Information Footnote
Reviewed by editor

Section II - Original Source

Isolated By (name)
F. Gallia and J. Rampas (1)

Isolated at Institute

Host Genus
Man

Species

Host Age/Stage
54 years

Sex
Female

Isolated From	Isolation Details
Organs/Tissues	**Brain**

Signs and Symptoms of Illness
Meningoencephalitis

Arthropod

Time Held Alive before Inoculation

Collection Method

Collection Date
4/22/1948

Place Collected (Minimum of City, State, Country)
Beroun, Czechoslovakia

Latitude
50° N

Longitude
15° E

Macrohabitat

Microhabitat

Method of Storage until Inoculated
Ice

Footnotes

Section III - Method of Isolation

Inoculation Date

Animal (Details will be in Section 6)
ad mice

Route Inoculated
Intracerebral

Reisolation

Other Reasons
Other isolations in the same area

Homologous Antibody Formation by Source Animal

Test(s) Used

Footnotes

Section IV - Virus Properties

Physicochemical

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

Stability of Infectivity (effects)

pH (infective range)

Lipid Solvent (ether - % used to test)	After Treatment Titer	Control Titer
Lipid Solvent (chloroform)	After Treatment Titer	Control Titer
Lipid Solvent (deoxycholate)	After Treatment Titer	Control Titer

Other (formalin, radiation)

Virion Morphology

Shape	Dimensions	
Mean nm	Range nm	
Measurement Method	Surface Projections/Envelope	Nucleocapsid Dimensions, Symmetry

Morphogenesis

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

Hemagglutination

Hemaggiutination	Antigen Source	Erythrocytes (species used)
pH Range	pH Optimum	
Temperature Range	Temperature Optimum	
Remarks		
Serologic Methods Recommended		
Footnotes		

Section V - Antigenic Relationship and Lack of Relationship to Other Viruses

By CF and neutralization tests the virus is related to Russian Spring-Summer encephalitis virus and to louping ill virus.

Editor's Note: The Hanzalova strain is being registered because it appears to have been the first tick-borne encephalitis strain isolated in Czechoslovakia. Though it was not included in the studies of Clarke [5] , [6] , it presumably possesses the same antigenic characteristics as the Stillerova strain designated by Clarke as the prototype for the "Central European" serotype strains. According to Dr. Rampas the Stillerova strain was isolated from the blood of a laboratory assistant (Stillerova) who had a "mild abortive" infection while working with the Hanzalova or other strains which had been isolated.
Dr. Rampas states that "neither the Hanzalova nor the Stillerova strain has been published in any special report. Reference [1] describes the laboratory infection of Dr. Gallia himself. He fell ill about one month following inoculation of the Hanzalova material. The virus isolated from his blood was identical with the Hanzalova strain."

Section VI - Biologic Characteristics

Virus Source (all VERTEBRATE isolates)
Blood (LV)

Lab Methods of Virus Recovery (ALL ISOLATIONS)
Weanling mice

Cell system (a)	Virus passage history (b)	Evidence of Infection							
		CPE			PLAQUES			Growth Without CPE	
		Day (c)	Extent (d)	Titer TCD50/ml (e)	Day (c)	Size (f)	Titer PFU/ml (e)	+/- (g)	

Section VII - Natural Host Range (Additional text can be added below table)

Vertebrate (species and organ) and arthropod	No. isolations/No. tested	No. with antibody/No. tested Test used	Country and region
Man	yes		Czechoslovakia
Ixodes ricinus	2		Czechoslovakia, 1949

Section VIII - Susceptibility to Experimental Infection (include viremia)

Experimental host and age	Passage history and strain	Inoculation Route-Dose	Evidence of infection	AST (days)	Titer log10/ml
Mice (nb)		ic			
Mice (nb)		ip			
Mice (nb)		sc			
Mice (wn)		ic			
Mice (wn)		ip			
Mice (ad)		ic 0.03	Encephalitis, death		8.5
Mice (nb)		ip	Encephalitis death		8
hamster		ic	Encephalitis		
lamb		ic	Encephalitis, death		
embryonated egg (7 day)		ys	Death		

Section IX - Experimental Arthropod Infection and Transmission

Arthropod species & virus source(a)	Method of Infection log10/ml (b)		Incubation period (c)		Transmision by bite (d)		Assay of arthropod, log10/ml (e)		
	Feeding	Injected	Days	°C	Host	Ratio	Whole	Organ	System

Section X - Histopathology

Character of lesions (specify host)
CNS lesions in mice are characterized by a two-stage degeneration of the neurons and subsequent round cell inflammation and cuffing(3,4)

Inclusion Bodies — Intranuclear

Organs/Tissues Affected

Category of tropism
Neurotropic

Section XI - Human Disease

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

Section XII - Geographic Distribution

Known (Virus detected)
Czechoslovakia

Suspected (Antibody only detected)

Section XIII - References

1. Gallia, F., et al. 1949. Cas. Lek. Ceskych. 88:(9), 224.
2. Rampas, J. and Gallia, F. 1949. Cas. lek. Ceskych. 88:(41), 1179.
3. Fischer, J. and Rampas, J. 1952. J. Hyg. Epid. Microb. and Immunol. (Prague) 1:(1), 49-56.
4. Rampas, J. and Fischer, J. 1954. J. Hyg. Epid. Microb. and Immunol. (Prague) 3:(1), 43-47.
5. Clarke, D.H. Symposium of the Czechoslovak Academy of Sciences. Biology of Viruses of the tick-borne encephalitis complex. II. 1960. Academic Press, Inc., New York. 1962. pp. 67-75.
6. Clarke, D.H. 1964. Bull. World Health Organ. 31:45-56.

Remarks

*** For more information on histology and for the symptomatology of human disease, consult Absettarov (Biphasic Meningoencephalitis), Hyper (Czechoslovak tick-borne encephalitis) strains which belong to the same antigenic type. Information on the latter strains is more extensive and involves many more human infections.**