

<b>Virus Name: Tahyna</b>		<b>Abbreviation: TAHV</b>
Status <b>Arbovirus</b>	Select Agent <b>No</b>	SALS Level <b>2</b>
SALS Basis <b>Results of SALS surveys and information from the Catalogue.</b>		
Other Information		
Antigenic Group <b>California</b>		

**SECTION I - Full Virus Name and Prototype Number**

Prototype Strain Number / Designation <b>92</b>	Accession Number	Original Date Submitted <b>7/25/1984</b>
Family <b>Bunyaviridae</b>	Genus <b>Bunyavirus</b>	
Information From <b>Dr. Vojtech Bardos</b>	Address <b>Institute of Parasitology, Czechoslovak Acad. Sci., 16632 Praha-6, Czechoslovakia</b>	
Information Footnote <b>Revised</b>		

**Section II - Original Source**

Isolated By (name) <b>V. Bardos, and V. Danielova (1)</b>	Isolated at Institute <b>Inst. Epid. Microbiol., Bratislava</b>	
Host Genus <b>Aedes caspius (pool of 50)</b>	Species	Host Age/Stage <b>Adult</b>
Sex <b>Female</b>		
<u>Isolated From</u>	<u>Isolation Details</u>	
Signs and Symptoms of Illness	Arthropod <b>Depleted</b>	
Time Held Alive before Inoculation		
Collection Method <b>Entomological nets</b>	Collection Date <b>7/17/1958</b>	
Place Collected (Minimum of City, State, Country) <b>Tahyna village, Czechoslovakia</b>		
Latitude <b>48° N</b>	Longitude <b>2° E</b>	
Macrohabitat <b>Lowland near Tahyna village</b>	Microhabitat <b>Lowland forest and pasture</b>	Method of Storage until Inoculated <b>12 hours at -20dC and 10 days at -35dC</b>
Footnotes		



**Morphogenesis**

Site of Constituent Formation in Cell	Site of Virion Assembly <b>Cytoplasm</b>	Site of Virion Accumulation <b>Cytoplasm</b>
Inclusion Bodies	Other	

**Hemagglutination**

Hemagglutination <b>Yes</b>	Antigen Source <b>SMB ext. by sucrose-acetone; Vero cell cultures</b>	Erythrocytes (species used) <b>Goose</b>
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pH Range <b>5.7-6.3</b>	pH Optimum <b>6.1</b>
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Temperature Range <b>4dC - 22dC</b>	Temperature Optimum <b>4dC</b>
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Remarks

Serologic Methods Recommended  
**HI, CF, NT, IFA, counter immunoelectrophoresis**

Footnotes

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

Not related to the viruses of groups A, B, C, Bunyamwera [5].

**Relationship between Tahyna and California encephalitis viruses by hemagglutination-inhibition test [5]**

Antibody to:	Number of injections	Antigen	
		Tahyna	CE
Tahyna, New York	1	80	10
Tahyna, New York	2	320	40
Tahyna, Porterfield		80	20
California enc.	5	1280	1280
California enc.	6	2560	2560

**Relationship between Tahyna and California encephalitis virus by neutralization test**

Serum	Virus	
	Tahyna (Porterfield)	CE

	Titer, dex	Neutralization index	Titer, dex	Neutralization index
Tahyna, New York	2.7	4000	4.0	300
California enc.	2.7	4000	2.4	12000
Normal	6.3		6.5	

**Relationship by complement-fixation test between Tahyna and viruses of the California encephalitis serogroup (Whitman and Shope)**

Antibody to:	Number of injections	Antigen			
		Tahyna	CE	Melao	TVT
Tahyna	3	16/256 *	8/128	0	0
CE	6	64/512	128/512		
Melao	6	128/256		256/512	
TVT	6	16/128			64/512

\* Serum titer/antigen titer; 0 = <4/<4

Virus Source (all VERTEBRATE isolates)  
CNS (M)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)	Strain 92, P-3 to >P-67	2-3	4+	5.5**	2	0.5-1.0	7.8-8.8**	
HeLa (CL)		4-5	4+	6.5-7.0				
Vero (CL)		3-5	4+	6.8	3	0.4-1.1	7.1	
Aedes aegypti (CL)				No CPE				+ (20)
Ae albopictus (CL)				No CPE				+ (21)
Anopheles stephensi (CL)				No CPE				+ (22)
An gambiae (CL)				No CPE				+ (23)

CPE and plaques produced in many cell cultures of human, lower primate, lower animal and avian origin (12-19). A few important examples are given below.

\*\* Expressed in dex

Vertebrate (species and organ) and arthropod	No. isolations/No. tested	No. with antibody/No. tested Test used	Country and region
<p>ISOLATIONS - MAN (blood): 3/13, 2/11 Czechoslovakia; 3/79 USSR; 1/1 (lab.inf.) Norway. RABBIT (blood): 1/16 Czechoslovakia; 2/91 Austria (6-11).</p>			
<p>ANTIBODY - MAN: 157/948 NT Europe; 6/79 NT Lumbo, Mozambique, Africa; 10/400 NT Ndumu, Natal, South Africa; 156/925 NT Tadjik, USSR (23-25). ANIMALS: Erinaceus roumanicus 7/164 NT Czechoslovakia, Austria; Insectivora (3 species) 0/30 NT Austria; Chiroptera (4 species) 0/144 NT Czechoslovakia, Austria; Vulpes vulpes 1/7 NT Austria; Rodentia (7 species) 2/342 NT Czechoslovakia, Austria; Lepus aroepeus 163/451 NT Czechoslovakia, Austria; 2/3 NT France; Oryctolagus cuniculus 17/181 NT Czechoslovakia, Austria; 21/39 NT France; Sus scrofa 1/3 NT Austria, 3/4 HI France; Capreolus capreolus 4/15 NT Czechoslovakia, Austria; Canis familiaris 3/9 NT Czechoslovakia; Sus scrofa domestic 93/195 NT Czechoslovakia, Austria; Bos taurus 97/895 NT Czechoslovakia, Austria, 27/1, 165 HI Portugal; Equus caballus 65/103 NT Czechoslovakia, Austria; 21/61 HI Czechoslovakia, 1/150 (&gt;50.0%) NT France. BIRDS: 37/513 (56 species) NT Czechoslovakia; Phasianus colchicus 0/44 NT Czechoslovakia; birds 0/400 (39 species) HI Portugal; Sturnus vulgaris 2/32 NT Austria; Birds 0/755 (27 species) HI Austria; Anseriformes 11/144 NT; Birds 0/280 (29 species) HI Czechoslovakia (26-44).</p>			
<p>ISOLATIONS - MOSQUITOES: Aedes (Aed) caspius 2; Ae vexans 3; Ae cantans 2; Culiseta annulata 1; Ae cinereus 6; Ae sticticus 1; Culex (Cux) modestus 1; Culiseta annulata larvae 1 Czechoslovakia; Ae caspius and Ae vexans 2, Italy; Culicidae (70% Ae vexans) 54 Fed. Rep. Germany; Ae (Sku) pembaensis 12 Mozambique; Anopheles hyrcanus 1 Azerbaijan, USSR; Ae sticticus, Ae dianteus, Norway; Ae vexans, Yugoslavia (9,24,45-53); Aedes communis 1 Murmansk region, USSR (54).</p>			

**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)	SMB 11, "92"	ic 0.15	Encephalitis and death	2-5	8.8
Mice (nb)		ip			
Mice (nb)		sc 0.03	Encephalitis and death	2-5	6.2
Mice (wn)		ic 0.03	Encephalitis and death	3-6	7.0
Mice (wn)		ip 0.1	Sporadic encephalitis	5-6	<1.0

Death produced in suckling mice (ic and ip), weanling mice (ic), suckling white rats (ic and sc), Syrian hamsters (ic), chick embryos (ys). No illness: weanling mice (ip), adult white rats (ic), guinea pigs (ic), rabbits (ic). Viremia produced in suckling pigs, horses, hares, rabbits, hedgehogs (5,10,34).

Viremia and antibody production (NT, CF, HI) after sc inoculation in rhesus, *M. radiata*, *C. aethiops*, and *P. troglodytes*, *Tahyna* virus infection with illness transmitted to chimpanzees by *Culiseta annulata* (32,33).

Not susceptible: Squirrels, pheasants, frogs, sand lizards, ringed snakes (4,24,26,30).

**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
<p><i>Tahyna</i> will multiply in or be transmitted to mice by bite of experimentally infected <i>Culiseta annulata</i>, <i>Aedes sticticus</i>, <i>Ae vexans</i> and <i>Ae communis</i> (18,24,26,28,32-34).</p> <p><i>Ixodes ricinus</i> nymphs do not maintain infection after feeding on viremic hamsters (18,26).</p>									

**Section X - Histopathology**

Character of lesions (specify host)

**Neuronal degeneration, edema, glial cell proliferation and perivascular infiltration (7).**

Inclusion Bodies

Intranuclear

Organs/Tissues Affected

**Brain (LV)**

Category of tropism

**Neurotropic**

**Section XI - Human Disease**

In Nature

Residual

Death

**Significant**

Subclinical

Overt Disease

Clinical Manifestations

**Headache (R), prostration, fever, conjunctival inflammation, myalgia, vomiting, stiff neck, CNS signs**

Number of Cases

**Several hundred; seven cases with virus isolation from blood**

Category (i.e. febrile illness, etc.)

**Febrile illness**

**Section XII - Geographic Distribution**

Known (Virus detected)

**In many countries of Europe, Africa and Asia, USSR**

Suspected (Antibody only detected)

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## Remarks