

Virus Name: Tacaiuma		Abbreviation: TCMV
Status Probable Arbovirus	Select Agent No	SALS Level 2
SALS Basis Results of SALS surveys and information from the Catalogue.		
Other Information		
Antigenic Group Anopheles A		

SECTION I - Full Virus Name and Prototype Number

Prototype Strain Number / Designation BeAn 73	Accession Number	Original Date Submitted 2/18/1985
Family Bunyaviridae	Genus Bunyavirus	
Information From Robert E. Shope	Address Yale Arbovirus Research Unit, New Haven, Connecticut	
Information Footnote Reviewed by editor		

Section II - Original Source

Isolated By (name) Belem Virus Lab. (1)	Isolated at Institute Belem, Para, Brazil	
Host Genus Cebus apella (1)	Species	Host Age/Stage Adult
Sex Not Answered		
<u>Isolated From</u>	<u>Isolation Details</u>	
Serum/Plasma		
Signs and Symptoms of Illness	Arthropod	
Time Held Alive before Inoculation		
Collection Method Femoral venipuncture	Collection Date 1/11/1955	
Place Collected (Minimum of City, State, Country) Oriboca Forest, Brazil		
Latitude 2° S	Longitude 48° W	
Macrohabitat Virgin forest	Microhabitat In cage, 5 meters from ground	Method of Storage until Inoculated
Footnotes		

Section III - Method of Isolation

Inoculation Date
1/11/1955

Animal (Details will be in Section 6)
nb mice

Route Inoculated
Intracerebral

Reisolation
Yes

Other Reasons

Homologous Antibody Formation by Source Animal
Yes

Test(s) Used
NT

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) 1:1000	After Treatment Titer <3.0 dex	Control Titer 7.5 dex
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

Hemagglutination Antigen Source Erythrocytes (species used)
Yes **SMB ext. by sucrose-acetone + sonication** **Goose**

pH Range pH Optimum
5.7-6.3 **6.0**

Temperature Range Temperature Optimum
 27dC

Remarks

Serologic Methods Recommended
HI, CF, NT

Footnotes

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

Immune Sera	Tacaiuma Antigen			Antigens	Tacaiuma Antisera		
	CF		NT		CF		NT
	Ht/Ho	Ratio	Ht/Ho		Ht/Ho	Ratio	Ht/Ho
Anopheles A	8/64	1/8	<10/40	Anopheles A	8/128	1/16	<10/160
Lukuni	<8/512+	<1/64	<10/320	Lukuni	<8/128	<1/16	<10/160
ColAn 57389	<8/512+	<1/64	<10/40	ColAn 57389	<8/128	<1/16	<10/160

NT: LNI in dex.

Tests done by CDC, Atlanta.

Also see Reference [7] : ANA Complex and TCM Complex in ANA group.

SIRACA has antigenically classified Tacaiuma virus as a distinct virus type and placed it in the Tacaiuma complex of the ANA serogroup. Two unregistered viruses have been designated as subtypes of Tacaiuma virus. The registered Virgin River virus has been designated as a variety of one of the unregistered subtypes [9] , [10] .

Section VI - Biologic Characteristics

Virus Source (all VERTEBRATE isolates)
**vesicular fluid and vesicular epithelium from snout, lips,
 tongue, teats and coronary band of feet (LV). Blood (M)**

Lab Methods of Virus Recovery (ALL ISOLATIONS)
**newborn mice, weaning mice, guinea pigs, chick embryos,
 and mammalian cell cultures**

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)	
Vero (CL)	Prototype, SMB 10					1 mm	4.7* (5)	
LLC-MK2 (CL)					6	1 mm	8.2 (5)	

* Expressed in dex

Vertebrate (species and organ) and arthropod	No. isolations/No. tested	No. with antibody/No. tested Test used	Country and region
Man		12/1,360 HI	Brazilian Amazon
Man (blood)	1		Para, Brazil (8)
Man		8/122 HI	French Guiana
Sentinel Cebus apella	1		Para, Brazil (1)
Sentinel mice	0/16,315		Para, Brazil
Horse		27/87 HI	
Nectomys, Oryzomys		13/156 HI	
Bats		24/483 HI	Amapa, Brazil
Forest birds		6/355 HI	Para, Brazil (4)
Anopheles (Ker) cruzii	1		Sao Paulo, Brazil (2)
Haemagogus sp.	5		Para and Amapa, Brazil

Many of above human, horse, rodent and bat HI positives confirmed by NT. Marsupials, sheep, edentates, carnivores, monkeys, lizards, rabbit, and frogs found negative for HI antibody. Cattle, pigs, water buffalo HI positive in Brazilian Amazon. One each man, bird and horse HI positive, Argentina.

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 log ₁₀ /ml
Mice (nb)		ic 0.02	Death	4.5	9.2
Mice (nb)		ip 0.02	Death, viremia	5.5	9.2
Mice (nb)		sc			
Mice (wn)		ic 0.03	Death	7.8	7.2
Mice (wn)		ip 0.03	Antibody	7.8	7.2

Section IX - Experimental Arthropod Infection and Transmission

Arthropod species & virus source(a)	Method of Infection log ₁₀ /ml (b)		Incubation period (c)		Transmission by bite (d)		Assay of arthropod, log ₁₀ /ml (e)		
	Feeding	Injected	Days	°C	Host	Ratio	Whole	Organ	System
Aedes aegypti, An quadrimaculatus			Following parenteral inoculation, high virus titer detected in salivary glands after several passages (+4.0 dex) (6).						
Cx quinquefasciatus			Following parenteral inoculation, propagation failed after 3 passages (6).						

