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

Isolated From	Isolation Details
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

Hemaggiutination	Antigen Source	Erythrocytes (species used)
Yes	**SMB ext. by sucrose-acetone + sonication**	**Goose**
pH Range **5.7-6.3**	pH Optimum **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

	Tacaiuma Antigen				Tacaiuma Antisera		
	CF		NT		CF		NT
Immune Sera	Ht/Ho	Ratio	Ht/Ho	Antigens	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	
		Day (c)	Extent (d)	Titer TCD50/ml (e)	Day (c)	Size (f)	Titer PFU/ml (e)	+/- (g)	
Vero (CL)	Prototype, SMB 10					1 mm	4.7* (5)		
LLC-MK2 (CL)					6	1 mm	8.2 (5)		

* Expressed in dex

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		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 log10/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 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
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).							

Section X - Histopathology

Character of lesions (specify host)
nb, ad mice: encephalitis only (L.B. Dias)

Inclusion Bodies — Intranuclear

Organs/Tissues Affected

Category of tropism

Section XI - Human Disease

In Nature — Residual — Death
Reported

Subclinical — Overt Disease

Clinical Manifestations
Fever (R) and headache (R)

Number of Cases — Category (i.e. febrile illness, etc.)
Febrile illness

Section XII - Geographic Distribution

Known (Virus detected)
Brazil

Suspected (Antibody only detected)
French Guiana; Argentina

Section XIII - References

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Remarks