Virus Name: **Timboteua** **Abbreviation:** **TBTV**

Status: Probable Arbovirus
SALS Level: 2
Antigenic Group: Guama
Taxonomic status: *Bunyavirus*
Other Information: None.

Select Agent:
SALS Basis: A7

HEPA Filtration:

Section I - Full Virus Name and Prototype Number

Full Virus Name:
Timboteua

Prototype Number:
BeAn 116382

Information from: F.P. Pinheiro and Amelia A.T. Rosa *

Date: 9/29/1984

Address: Inst. Evandro Chagas, FSESP, Brazilian Ministry of Health, CP 621, 66.000 Belem, Para, Brazil *

Reviewed by editor

Section II - Original Source

Isolated by: Belem Virus Laboratory **at:** Instituto Evandro Chagas, Brazil
Genus and species: Mouse, sentinel **Sentinel** X
Age/Stage: Newborn **Sex:**

Isolated From	Isolation detail

Signs and symptoms of illness:
Arthropod engorged depleted gravid
Time held alive before inoculation:
Collection date: 3/12/1967 **Method:** Unknown
Place collected: APEG, IPEAN, Belem, Para
Latitude: 1° 28' " S **Longitude:** 48° 27' " W
Macrohabitat: Tropical rain forest
Microhabitat: Relatively undisturbed flooded forest, ground level
Method of storage until inoculated: -60dC
Footnotes:

Section III - Method of Isolation and Validity

Inoculation Date: 3/17/1967
Animal: nb mice **Embryonated egg:** **Tissue Culture:**
(Details in Section VI - Biologic Char.)
Route inoculated: Intracerebral **Reisolation:** Not tried
Other reasons: Other strains of the virus isolated in the same area
Homologous antibody formation by *source animal* (See Section II):
Test used: HI CF NT
Other:
Footnotes:

Section IV - Virus Properties

Physicochemical:
RNA: **DNA:** **Single Strand:** **Double Strand:**
Pieces: **Infectivity:** **Sedimentation coefficient(s): /strong>**
Percentage wt. of virion protein **, lipid** **carbohydrate**
Virion polypeptides:
Number: **Details:**
Non-virion polypeptides:
Number: **Details:**
Virion density:
Sedimentation coefficient:
Nucleocapsid density **Sedimentation coefficient:**

Stability of infectivity **(effects) pH**
Lipid solvent:
(ether) **After treatment titer** **Control titer**
(chloroform) **After treatment titer** **Control titer**
Detergent:
(deoxycholate) 1:1000 **After treatment titer** <0.8 dex **Control titer** 6.2 dex
Other (formalin, radiation):

Virion morphology:
Shape **Dimensions**
Mean (nm) **range (nm)** **how meansured**
Surface projections, envelope
Nucleocapsid dimensions, symmetry

Morphogenesis:
Site of constituent formation in cell
Site of virion assembly
Inclusion bodies
Other

Hemaggiutination:
HemaggiutinationYes **Antigen source** SM serum ext. by acetone
Erthrocytes Goose **pH range** 5.8-6.0 **pH optimum** 6.0
Temperature optimum Room temperature**range** RT and 37dC
Remarks
Serologic methods recommended CF, HI, NT
Footnotes:

Section V - Antigenic Relationship And Lack of Relationship To Other Viruses

Timboteua virus is a member of group Guama, by CF, HI, and NT (CF data not shown here).

CF TESTING

Ascitic Fluid or Hyperimmune Mouse Sera	Antigens					
	Catu	Guama	Moju	Ananindeua	Bimiti	Timboteua
Catu	64/64 [a]	32/64	16/64	8/64	32/256	0
Guama	64/64	64/256	64/256	32/64	64/256	4/64
Moju	64/16	64/64	64/256	32/64	64/256	0
Ananindeu	64/16	64/64	64/64	128/64	64/256	8/64
Bimiti	128/64	128/64	64/256	32/64	128/256	16/64
Timboteua	8/16	8/64	0	0	16/64	256/256
Guama Gr.	128/64	128/64	128/64	32/64	256/256	32/256

[a] Reciprocal of antibody/antigen titers: 0 = <4/<4

HI TESTING

Ascitic Fluid or Hyperimmune Mouse Sera	Antigens (4 units)					
	Catu	Guama	Moju	Ananindeua	Bimiti	Timboteua
Catu	160	0	0	0	0	0
Guama	0	80	20	40	0	0
Moju	0	20	160	0	0	0
Ananindeua	0	20	0	160	0	0
Bimiti	0	0	0	0	160	0
Timboteua	0	0	0	0	0	160
Gr. Guama	160	80	40	40	160	80

0 = <10

NT TESTING (INFANT MICE, IC ROUTE)

Ascitic Fluid or Hyperimmune Mouse Sera	Virus					
	Catu	Guama	Moju	Ananindeua	Bimiti	Timboteua
Catu	> 5.0 [b]	<1.2	<0.9	<0.5	<1.1	<1.3
Guama	<1.1	4.4	2.1	2.5	<1.1	<1.3
Moju	<1.1	<1.2	> 3.9	1.5	<1.1	<1.3
Ananindeua	<1.1	3.4	1.9	5.5	<1.1	<1.3
Bimiti	<1.1	<1.2	<0.9	<0.5	5.6	2.8
Timboteua	<1.1	<1.2	<0.9	<0.5	<1.1	> 6.3

[b] LNI in dex

Section VI - Biologic Characteristics

Virus source (all VERTEBRATE isolates):
Lab Methods of Virus Recovery (ALL ISOLATIONS): Newborn mice
Susceptibility of Cell Culture Systems:

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)	SM 13	5-6	4+	5.5 (c)					
BHK-21 (CL)	SM 11				3	2 mm	4.9 (c)		

(c) Expressed in dex

Section VII - Natural Host Range

Vertebrate (species and organ) and arthropod	No. isolations/No. tested	No. with antibody/No. tested Test used	Country and region
Sentinel mice (brain and liver)	4		IPEAN, Para, Brazil
Proechimys sp. (blood)	1	0/52 HI	Humaita, Amazonas, Brazil
Oryzomys sp.		0/36 HI	
Nectomys sp.		0/10 HI	
Rattus rattus		0/7 HI	
Oecomys sp.		0/3 HI	
Dasyprocta sp.		0/2 HI	
Agouti paca		0/1 HI	
Sciurus sp.		0/1 HI	
Monodelphis sp.		0/8 HI	
Sentinel monkeys		0/2 HI	Altamira, Para, Brazil
Sentinel chickens		0/57 HI	
Proechimys sp.		0/ HI	Cachoeira Porteira, Para, Brazil
Oryzomys sp.		0/3 HI	
Nectomys sp.		0/3 HI	
Neacomys sp.		0/3 HI	
Rattus alexandrinus		0/1 HI	
Myoprocta sp.		0/2 HI	
Monodelphis sp.		0/20 HI	
Philander opossum		0/18 HI	
Lizard (jacuraru)		0/1 HI	
Monkeys		0/9 HI	
Callithrix		0/2 HI	
Bats		0/13 HI	
Tayassu pecari		0/1 HI	

Land turtle		0/3 HI	

Section VIII - Susceptibility To Experimental Infection (Record Viremia)

Experimental host and age	Passage history and strain	Inoculation Route-Dose	Evidence of infection	AST (days)	Titer log10/ml
Mice (nb)	SM 2	ic 0.02	Death	6.0	
Mice (nb)		ip 0.02	None		
Mice (nb)		sc			
Mice (wn)		ic 0.03	None		
Mice (wn)		ip 0.03	None		
Mice (nb)	SM 13	ic 0.02	Death		8.2 (serum)
Mice (nb)	SM 16	ic 0.02	Viremia, death		9.5 (serum)

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:
Inclusion bodies:
Cytoplasmic:(M) (LV) Intranuclear: (M) (LV)
Organs-tissues affected:
Category of tropism:

Section XI - Human Disease

Human disease:	**In nature:**	**(S)**	**(R)**
	Death:	**(S)**	**(R)**
	Residua:	**(S)**	**(R)**
Laboratory infections:	**Subclinical:**	**(S)**	**(R)**
	Overt Disease:	**(S)**	**(R)**

Clinical manifestations:
Category: **No. of cases:**

Section XII - Geographic Distribution

Known (virus):
Para and Amazonas State, Brazil

Section XIII - References

Section XIV - Remarks