Virus Name: Timbo	Abbreviation: TIMV

Status
Possible Arbovirus

Select Agent
No

SALS Level
2

SALS Basis
Results of SALS surveys and information from the Catalogue.

Other Information

Antigenic Group
Timbo

SECTION I - Full Virus Name and Prototype Number

Prototype Strain Number / Designation
BeAn 41787

Accession Number

Original Date Submitted
2/27/1985

Family
Rhabdoviridae

Genus

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 Laboratory (1)

Isolated at Institute
Belem, Para, Brazil

Host Genus
Ameiva ameiva ameiva (lizard)

Species

Host Age/Stage
adult

Sex
Male

Isolated From	Isolation Details
Organs/Tissues	**heart and liver pool from 2 males and 1 female**

Signs and Symptoms of Illness
none observed

Arthropod

Time Held Alive before Inoculation

Collection Method
caught with a noose

Collection Date
4/27/1962

Place Collected (Minimum of City, State, Country)
Instituto Agronomico do Norte forest

Latitude
1° 28' S

Longitude
48° 27' W

Macrohabitat
secondary growth forest

Microhabitat
ground level

Method of Storage until Inoculated
not stored

Footnotes

Section III - Method of Isolation

Inoculation Date
4/27/1962

Animal (Details will be in Section 6)
nb mice

Route Inoculated
intracerebral

Reisolation
Yes

Other Reasons

Homologous Antibody Formation by Source Animal
Not tested

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
bullet-shaped (2, 3)

Dimensions
259 nm in length (2)

Mean
nm

Range
nm

Measurement Method
by electron microscopy (2, 3)

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 **No**	Antigen Source **SMB ext. by sucrose-acetone**	Erythrocytes (species used)
pH Range	pH Optimum	
Temperature Range	Temperature Optimum	
Remarks		
Serologic Methods Recommended **CF, HI**		
Footnotes		

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

Timbo antigen did not react in CF testing with: Mucambo, EEE, Mayaro, Una, Aura, Pixuna, YF, Ilheus, Bussuquara, SLE, Oriboca, Murutucu, Apeu, Caraparu, Marituba, Itaqui, Nepuyo, Catu, Guama, Moju, Capim, Guajara, Bushbush, Mirim, Maguari, Kairi, Guaroa, Tucunduba, Taiassui, Sororoca, Melao, Oropouche, Icoaraci, Tacaiuma, Turlock, Cocal, Lukuni, Candiru, Piry, Pacui, Acara, Irituia, Jurona, Anhanga, Naples, Chagres, Germiston, Bunyamwera, Batai, Ilesha, California, trivittatus, Tahyna, Lumbo, Sathuperi, Akabane, Ingwavuma, Navarro, Manzanilla, EHD-NJ, Triniti, Aruac, Tacaribe, Hart Park, Colorado tick fever, Anopheles A and B, Panama J55, B535, Cas Cas, Hughes, Tete, Witwatersrand, Quaranfil, Sicilian, Bwamba, Mossuril, Wad Medani, Wongal, Mapputta, Bakau, Ketapang, Tsuruse, K-622, Wanowrie, Chenuda, VSNJ, Simbu, Ganjam, Nodamura, Lebombo, Polyam.
Timbo serum (hyperimmune, titer = 64) did not react in CF testing with: Jurona, Marco, Anhanga.

Timbo serum did not inhibit hemagglutination of: EEE, Mucambo, Aura, Una, Mayaro, Pixuna, YF, Ilheus, Bussuquara, SLE, Oriboca, Murutucu, Caraparu, Guama, Maguari, Guaroa, Icoaraci, Tacaiuma, Turlock, Candiru, Anhanga

CF relationship demonstrated with Chaco as follows:

Antigen	Serum	
	Timbo	Chaco
Timbo	64/64	16/16
Chaco	8/>=64	64/>=64
Normal brain	0/0	0/0

CF results given as serum titer/antigen titer

The Timbo serogroup presently consists of Timbo, Chaco and the recently registered Sena Madureira virus. See Reference [4] and the registration card for Sena Madureira virus.

Section VI - Biologic Characteristics

Virus Source (all VERTEBRATE isolates)

Lab Methods of Virus Recovery (ALL ISOLATIONS)
Newborn 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)	
BHK-21 (CL)	P-7				6	Plaques	43.6* (5)		
Vero (CL)	P-5					No Plaques (6)			
LLC-MK2 (CL)					14	1 mm	2.7 (6)		

* 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
Ameiva ameiva ameiva	6/1,526	5/225 NT	Para, Brazil
Other reptiles	0/4,400	5/162 NT	
Birds	0/6,000		
Amphibians	0/42		
Man	0/2,095		
Rodents	0/11,043		
Marsupials	0/1,950		
Monkeys	0/87		
Bats	0/878		
Endentates	0/127		
Carnivores	0/32		
Horse and cattle	0/185		
Sentinel mice	0/16,315		Amazon region
Arthropods	No isolations		

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)	P-3	ic 0.02	death	4.2	
mice (nb)		ip 0.02	none		
mice (nb)		sc			
mice (wn)		ic 0.03	antibody		
mice (wn)		ip 0.03	antibody		

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)
ad, nb mice: encephalitis only (L.B. Dias)

Inclusion Bodies — Intranuclear

Organs/Tissues Affected

Category of tropism

Section XI - Human Disease

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

Section XII - Geographic Distribution

Known (Virus detected)

Suspected (Antibody only detected)

Section XIII - References

1. Causey, O.R., et al. 1966. Am. J. Trop. Med. Hyg. 15:239-243.
2. Araugo, R., et al. 1979. Revista do Inst. De Med. Trop. de Sao Paulo 21:172-177.
3. Monath, T.P., et al. 1979. Arch. Virol. 60:1-12.
4. Tesh, R.B., et al. 1983. J. Gen. Virol. 64:169-176.
5. Pinheiro, F.P. Personal communication.
6. Stim, T.B. 1969. J. Gen. Virol. 5:329-338.

Remarks