

Virus Name: Marituba		Abbreviation: MTBV
Status Arbovirus	Select Agent No	SALS Level 2
SALS Basis Results of SALS surveys and information from the Catalogue.		
Other Information		
Antigenic Group C		

SECTION I - Full Virus Name and Prototype Number

Prototype Strain Number / Designation BeAn 15	Accession Number	Original Date Submitted 12/27/1984
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 Laboratory (1)	Isolated at Institute Belem, Para, Brazil	
Host Genus Cebus apella, sentinel	Species	Host Age/Stage Adult
Sex Male		
<u>Isolated From</u> Serum/Plasma	<u>Isolation Details</u>	
Signs and Symptoms of Illness None noted	Arthropod	
Time Held Alive before Inoculation Nil		
Collection Method By syringe from femoral vein	Collection Date 12/27/1954	
Place Collected (Minimum of City, State, Country) Oriboca forest, Para, Brazil		
Latitude 1° 28' S	Longitude 4° 27' W	
Macrohabitat Virgin forest, bordering newly opened road near stream	Microhabitat In wire cage, 4 meters from ground	Method of Storage until Inoculated Not stored
Footnotes		

Section III - Method of Isolation

Inoculation Date 12/27/1954	
Animal (Details will be in Section 6) nb mice	
Route Inoculated Intracerebral	Reisolation Not tried
Other Reasons	
Homologous Antibody Formation by <u>Source Animal</u> 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)	
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<u>Stability of Infectivity (effects)</u>		
pH (infective range)		
Lipid Solvent (ether - % used to test)	After Treatment Titer Sensitive (4)	Control Titer
Lipid Solvent (chloroform)	After Treatment Titer	Control Titer
Lipid Solvent (deoxycholate)	After Treatment Titer Sensitive (4)	Control Titer
Other (formalin, radiation)		
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<u>Virion Morphology</u>		
Shape	Dimensions	
Mean nm	Range nm	
Measurement Method	Surface Projections/Envelope	Nucleocapsid Dimensions, Symmetry

Section VI - Biologic Characteristics

Virus Source (all VERTEBRATE isolates)
Blood (LV), CNS (LV)

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)	
HeLa (CL)			CPE (5)					
Detroit-6 (CL)			CPE (5)					
HeLa S3 (CL)			CPE (5)					
HEp-2 (CL)			CPE (5)					
Human embr. intestine (CL)			CPE (5)					
Rhesus monkey kidney (PC)						Plaques (6)		
Vero (CL)						Plaques (9)		
BHK-21 (CL)		2-3	4+	6.5*(15)		Plaques (9)		
LLC-MK2 (CL)					4	2 mm	8.0*(16)	

* Expressed in dex

Vertebrate (species and organ) and arthropod	No. isolations/No. tested	No. with antibody/No. tested Test used	Country and region
Man (blood)	3		Para, Brazil
Sentinel Cebus	13		
Sentinel mouse	35/1,6315		
Didelphis marsupialis (blood)	1		
Culex aikenii	1		
Culex (Mel) spp.	3		
Culex portesi (see IX.(1))			Belem, Brazil (13)

Arboreal species of Caluromys and Marmosa found with 27% and 13% HI antibody respectively. Forest floor dwelling rodents and marsupials have under 6% HI antibody.

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	2.0	8.7
Mice (nb)		ip 0.02	Viremia, death(11)	2.0	8.3
Mice (nb)		sc			
Mice (wn)		ic 0.03	Viremia, some die (11)		
Mice (wn)		ip 0.03	Antibody		
hamster (ad)		ic	Occasional deaths (8)		
rhesus (ad)		sc	Viremia (10)		
Braydpus (sloth) (ad)	H119190	sc 0.5	Viremia, 3/4 died	10-15	
chicks		iv	Viremia (11)		

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			Parenteral inoculation; high virus titer in salivary glands after several passages (11).						
Cx quinquefasciatus			Parenteral inoculation; failed after 3 passages (11)						
Culex portesi			Naturally infected transmitted to mice (13).						

Section X - Histopathology

Character of lesions (specify host)
SM, ad mice: brain - tumefaction, retraction, necrosis, sponginess Muscles - atrophy rare; liver - hepatocellular necrosis rare (7). In sloths (Bradypus): neuronal degeneration, hepatic and splenic congestion (L.B. Dias)

Inclusion Bodies Intranuclear

Organs/Tissues Affected
Brain (LV), skeletal muscles (LV)

Category of tropism
Neurotropic, musculotropic, viscerotropic

Section XI - Human Disease

In Nature Reported	Residual	Death
Subclinical	Overt Disease Reported	
Clinical Manifestations Fever (S), headache (S), prostration (S), myalgia (S), arthralgia (S), jaundice (R)		
Number of Cases Three	Category (i.e. febrile illness, etc.) Febrile illness	

Section XII - Geographic Distribution

Known (Virus detected)
Brazil

Suspected (Antibody only detected)

Section XIII - References

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6. Henderson, J. and Taylor, R.M. 1960. J. Immunol. 84:590-598.
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Remarks

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