Virus Name: Moju	Abbreviation: MOJUV

Status
Arbovirus

Select Agent
No

SALS Level
2

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

Other Information

Antigenic Group
Guama

SECTION I - Full Virus Name and Prototype Number

Prototype Strain Number / Designation
BeAr 12590

Accession Number

Original Date Submitted
1/27/1985

Family
Bunyaviridae

Genus
Bunyavirus

Information From
Belem Virus Lab

Address
Belem Virus Laboratory, Instituto Evandro Chagas, Belem, Para, Brazil

Information Footnote
Reviewed by editor

Section II - Original Source

Isolated By (name)
Belem Virus Laboratory

Isolated at Institute
Belem, Para, Brazil

Host Genus
Culex (Melanoconion) spp.

Species

Host Age/Stage
Adult

Sex
Female

Isolated From

Isolation Details

Signs and Symptoms of Illness

Arthropod

Time Held Alive before Inoculation

Collection Method
Under hood over sentinel mice

Collection Date
8/20/1959

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

Latitude
2° S

Longitude
48° W

Macrohabitat
Secondary growth forest

Microhabitat
One meter above ground

Method of Storage until Inoculated
At -60dC

Footnotes

Section III - Method of Isolation

Inoculation Date
8/24/1959

Animal (Details will be in Section 6)
nb mice

Route Inoculated
Intracerebral

Reisolation
No

Other Reasons

Homologous Antibody Formation by Source Animal

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	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, serum ext. by sucrose-acetone; acetone**	**Goose**
pH Range **5.7-6.4**	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

	Antigen of Registered Virus						Immune Serum of Registered Virus				
	HI		CF		NT		HI		CF		NT
Immune Serum	Ht/Ho	Ind.	Ht/Ho	Ind.	Ht/Ho	Antigen	Ht/Ho	Ind.	Ht/Ho	Ind.	Ht/Ho
Guama	20/2560	1/128	128/256	1/2	1.5/3.9	GMA	160/320	1/2	64/64	1/1	2.9/3.0
Catu	40/640	1/16	64/256	1/4	0/3.1	Catu	0/320	0	64/64	1/1	0/3.0
AN 20525	80/80	1/1	64/256	1/4	0/3.0	AN 20525	0/320	0	16/64	1/4	1.1/3.0
Bimiti	20/ND		16/32	1/2		BIM			16/64	1/4	
Capim	10/320	1/32	0/256	0	0/2.2	CAP	0/320	0	0/64	0	0/3.0
Guajara	10/ND		0/128	0	0/2.3	GJA			0/64	0	0.8/3.0
AN 20076	0/80	0	0/256	0	0/2.0	AN 20076	0/320	0	4/64	1/16	0/3.0
Mirim	40/80	1/2	0/128	0		MIR	0/320	0	0/64	0	

All sera are mouse hyperimmune.

Bimiti serum homologous testing done by the Rockefeller Foundation Virus Laboratories, New York.

NT: LNI in dex

SIRACA has antigenically classified Moju virus as a distinct virus type and placed it in the Guama complex, one of five complexes comprising the Guama serogroup [5] .

Section VI - Biologic Characteristics

Virus Source (all VERTEBRATE isolates)
Blood (M)

Lab Methods of Virus Recovery (ALL ISOLATIONS)
Newborn mice, BHK-21 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)	
GMK (CL)	BeAr 12590,		CPE (2)						
Mouse embryo (PC)	P-4					Plaques (2)			
Vero (CL)					3	2 mm	6.3* (3)		
LLC-MK2 (CL)					6	1 mm	6.1 (3)		

* 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
Sentinel Cebus	2		Para, Brazil (1)
Sentinel mouse	238/16,315		
Nectomys squamipes	4		
Oryzomys (2 spp.)	17	25/148 HI	Para, Brazil
Proechimys guyannensis	18	71/164 HI	
Oecomys	1		
Didelphis marsupialis	1		
Sabethini	1		Para, Brazil (1)
Mansonia spp.	2		Para, Brazil
Cq venezuelensis	2		
Culex portesi	1		
Culex (Mel) sp.	2		
Culex vomerifer	8		

Most of the mammal isolations were from blood.

Other animals with lower antibody rates included: Nectomys, Didelphis, Marmosa, and Caluromys.

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-4	ic 0.02	Death	4.0	8.3
Mice (nb)		ip 0.02	Death, viremia	4.3	
Mice (nb)		sc			
Mice (wn)		ic 0.03	Antibody		
Mice (wn)		ip 0.03	Antibody		
hamsters (ad)		ic,ip	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; ic and ip: hydropic tumefaction (4). Thymus lesion in one sentinel mouse (L.B. Dias).

Inclusion Bodies — Intranuclear

Organs/Tissues Affected
Brain (LV)

Category of tropism
Neurotropic

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)
Brazil

Suspected (Antibody only detected)

Section XIII - References

1. Woodall, J.P. 1967. Atas Simpos. Biota. Amazon. 6:31-63.
2. Pinheiro, F.P. Personal communication.
3. Stim, T.B. 1969. J. Gen. Virol. 5:329-338.
4. De Paola, D. 1963. An. Microbiol. 11:187-208.
5. Calisher, C.H., et al. 1985. Intervirology. To be submitted.

Remarks