Virus Name: **Moju** **Abbreviation:** **MOJUV**

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

Select Agent:
SALS Basis: S

HEPA Filtration:

Section I - Full Virus Name and Prototype Number

Full Virus Name:
Moju

Prototype Number:
BeAr 12590

Information from: Belem Virus Lab *
Date: 1/27/1985

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

Reviewed by editor

Section II - Original Source

Isolated by: Belem Virus Laboratory **at:** Belem, Para, Brazil
Genus and species: Culex (Melanoconion) spp. **Sentinel** X
Age/Stage: Adult **Sex:** F

Isolated From	Isolation detail

Signs and symptoms of illness:
Arthropod engorged depleted gravid
Time held alive before inoculation:
Collection date: 8/20/1959 **Method:** Under hood over sentinel mice
Place collected: 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 and Validity

Inoculation Date: 8/24/1959
Animal: nb mice **Embryonated egg:** **Tissue Culture:**
(Details in Section VI - Biologic Char.)
Route inoculated: Intracerebral **Reisolation:** No
Other reasons:
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) After treatment titer Control titer
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:
Hemaggiutination Yes **Antigen source** SMB, serum ext. by sucrose-acetone; acetone
Erthrocytes Goose **pH range** 5.7-6.4 **pH optimum** 6.0
Temperature optimum 27dC **range**
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
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)	
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

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 (Record 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: ad, nb mice; ic and ip: hydropic tumefaction (4). Thymus lesion in one sentinel mouse (L.B. Dias).
Inclusion bodies:
Cytoplasmic:(M) **(LV)** **Intranuclear: (M)** **(LV)**
Organs-tissues affected: Brain (LV)
Category of tropism: Neurotropic

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):
Brazil

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.

Section XIV - Remarks