

Virus Name: Mirim		Abbreviation: MIRV
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 BeAn 7722	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 Cebus apella	Species	Host Age/Stage Adult
Sex Female		
<u>Isolated From</u>	<u>Isolation Details</u>	
Serum/Plasma		
Signs and Symptoms of Illness	Arthropod	
Time Held Alive before Inoculation		
Collection Method Femoral venipuncture	Collection Date 8/13/1957	
Place Collected (Minimum of City, State, Country) Instituto Agronomico do Norte Forest		
Latitude 2° S	Longitude 48° W	
Macrohabitat Old secondary forest	Microhabitat Wire cage, 5 meters from ground	Method of Storage until Inoculated
Footnotes		

Section III - Method of Isolation

Inoculation Date
8/3/1957

Animal (Details will be in Section 6)
nb mice

Route Inoculated
Intracerebral

Reisolation
Not tried

Other Reasons

Homologous Antibody Formation by Source Animal
No

Test(s) Used
HI, 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)	

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) 1:1000	After Treatment Titer 2.5 dex	Control Titer 5.6 dex
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

Hemagglutination

Antigen Source

Erythrocytes (species used)

Yes

SMB ext. by sucrose-acetone

Goose

pH Range

pH Optimum

5.7-6.4

6.0

Temperature Range

Temperature Optimum

27dC

Remarks

Serologic Methods Recommended

CF, HI, NT

Footnotes

Immune Sera	Antigen of Registered Virus				Antigen	Immune Serum of Registered Virus			
	HI		CF			HI		CF	
	Ht/Ho	Ind.	Ht/Ho	Ind.		Ht/Ho	Ind.	Ht/Ho	Ind.
Guama	0/2560	0	0/256	0	Guama	40/80	1/2	0/128	0
Catu	0/640	0	0/256	0	Catu	0/80	0	0/128	0
Moju	0/320	0	0/64	0	Moju	40/80	1/2	0/128	0
An 20252	0/80	0	0/256	0	An 20525	0/80	0	0/128	0
Bimiti	0/ND		0/32	0					
Capim	0/320	0	0/256	0	Capim	0/80	0	0/128	0
Guajara	0/ND		0/128	0	Guajara			0/128	0
An 20076	0/80	0	0/256	0	An 20076	0/80	0	0/128	0

All sera are hyperimmune mouse; NT = LNI in dex.

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

Section VI - Biologic Characteristics

Virus Source (all VERTEBRATE isolates)
bovine blood (LV)

Lab Methods of Virus Recovery (ALL ISOLATIONS)
newborn mice or BHK-21 cell cultures

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)	
Mouse embryo (PC) GMK (CL)			CPE (3)			Plaques (3)		
Hela (CL)	Prototype, SMB 4		CPE (4)					
Vero (CL)	Prototype, SMB 6				5-7	3 mm	6.2* (5)	
LLC-MK2 (CL)	Prototype, SMB 6				7	1 mm	5.6 (5)	

* Expressed in dex

Vertebrate (species and organ) and arthropod	No. isolations/No. tested	No. with antibody/No. tested Test used	Country and region
Sentinel Cebus	1		Para, Brazil (1)
Sentinel mouse	26/16,315		
Sentinel mouse	4		Sao Paulo, Brazil (2)
Sentinel hamster	1		
Culex taeniopus	1		Para, Brazil (7)
Culex (Mel) sp.	1		Para, Brazil (1)
Ae serratus	1		Para, Brazil
Psorophora ferox	1		
Proechimys		8/218 NT	
Marmosa		1/30 NT	
Oryzomys		0/68 NT	
Nectomys		1/20 NT	
Caluromys		1/26 NT	
Didelphis; Philander; Metachirus		0/94 NT	

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 log ₁₀ /ml
Mice (nb)		ic 0.02	Death	6.3	8.1
Mice (nb)		ip 0.02	Death	7.0	
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 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	Following parenteral inoculation, high virus titer in salivary glands after several passages (+ 4.0 dex) (6).								
Culex taeniopus	Naturally infected transmitted to mice (7).								

Section X - Histopathology

Character of lesions (specify host)

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)

Sao Paulo and Para, Brazil

Suspected (Antibody only detected)

Section XIII - References

1. Woodall, J.P. 1967. Atas Simpos. Biota Amazon. 6:31-63.
2. Lopes, O. de S. WHO Arbovirus Quarterly Rep. 1969, 1970.
3. Pinheiro, F.P. Personal communication.
4. Buckley, S.M. 1964. Proc. Soc. Exp. Biol. Med. 116:354-358.
5. Stim, T.B. 1969. J. Gen. Virol. 5:329-338.
6. Whitman, L. Personal communication.
7. Belem Virus Laboratory. 1965. Unpublished data.

Remarks