

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 NumberFull Virus Name: **Prototype Number:**
Mirim BeAn 7722Information from: Belem Virus Lab. **Date:**
* 1/27/1985

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

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Reviewed by editor

Section II - Original SourceIsolated by: Belem Virus Laboratory at: Belem, Para, Brazil
Genus and species: Cebus apella Sentinel X
Age/Stage: Adult Sex: F

Isolated From	Isolation detail
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Signs and symptoms of illness:

Arthropod engorged depleted gravid

Time held alive before inoculation:

Collection date: 8/13/1957 Method: Femoral venipuncture

Place collected: 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 and ValidityInoculation Date: 8/3/1957
Animal: nb mice Embryonated egg: Tissue Culture:
(Details in Section VI - Biologic Char.)
Route inoculated: Intracerebral Reisolation: Not tried
Other reasons:
Homologous antibody formation by source animal (See Section II): No
Test used: HI X CF NT X
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) 1:1000 After treatment titer 2.5 dex Control titer 5.6 dex
Other (formalin, radiation):

Virion morphology:

Shape Dimensions
Mean (nm) range (nm) how measured
Surface projections, envelope
Nucleocapsid dimensions, symmetry

Morphogenesis:

Site of constituent formation in cell
Site of virion assembly
Inclusion bodies
Other

Hemagglutination:

Hemagglutination Yes Antigen source SMB ext. by sucrose-acetone
Erythrocytes Goose pH range 5.7-6.4 pH optimum 6.0
Temperature optimum 27dC range
Remarks
Serologic methods recommended CF, HI, NT
Footnotes:

Section V - Antigenic Relationship And Lack of Relationship To Other Viruses

Immune Seras	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

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)
Mouse embryo (PC)						Plaques (3)	
GMK (CL)			CPE (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

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	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 (Record Viremia)

Experimental host and age	Passage history and strain	Inoculation Route-Dose	Evidence of infection	AST (days)	Titer log10/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 log10/ml (b)		Incubation period (c) Days	Transmision by bite (d)		Assay of arthropod, log10/ml (e)		
	Feeding	Injected		°C	Host	Ratio	Whole	Organ
Aedes aegypti								
Culex taeniopus								

Section X - Histopathology

Character of lesions: Encephalitis only (L.B. Dias)

Inclusion bodies:

Cytoplasmic:(M) (LV) Intranuclear: (M) (LV)

Organs-tissues affected:

Category of tropism:

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):

Sao Paulo and Para, Brazil

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. Stimpson, T.B. 1969. J. Gen. Virol. 5:329-338.
6. Whitman, L. Personal communication.
7. Belem Virus Laboratory. 1965. Unpublished data.

Section XIV - Remarks