Virus Name: Itimirim	Abbreviation: ITIV

Status
Possible Arbovirus

Select Agent
No

SALS Level
3

SALS Basis
Isufficient experience with virus; i.e., experience factor from SALS surveys was less than 500 in laboratory facilities with low biocontainment.

Other Information

Antigenic Group
Guama

SECTION I - Full Virus Name and Prototype Number

Prototype Strain Number / Designation
SPAn 47817

Accession Number

Original Date Submitted
9/24/1984

Family
Bunyaviridae

Genus
Bunyavirus

Information From
Oscar de Souza Lopes

Address
Instituto Adolfo Lutz, C.P. 7027, Sao Paulo, Brazil

Information Footnote
Reviewed by editor

Section II - Original Source

Isolated By (name)
Oscar de Souza Lopes

Isolated at Institute
Instituto Adolfo Lutz

Host Genus
Oryzomys sp.

Species

Host Age/Stage
Adult

Sex
Male

Isolated From	Isolation Details
Whole Blood	

Signs and Symptoms of Illness
None

Arthropod

Time Held Alive before Inoculation

Collection Method
Trap

Collection Date
11/11/1976

Place Collected (Minimum of City, State, Country)
Iguape County, State of Sao Paulo, Brazil

Latitude
24° 46' S

Longitude
47° 35' W

Macrohabitat
Sea level plain

Microhabitat
Brushy secondary growth forest

Method of Storage until Inoculated
Liquid nitrogen and electrical freezer (-70dC)

Footnotes

Section III - Method of Isolation

Inoculation Date
4/12/1978

Animal (Details will be in Section 6)
nb mice

Route Inoculated
Intracerebral

Reisolation
Not tried

Other Reasons

Homologous Antibody Formation by Source Animal
Not tested

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) **1:1000**	After Treatment Titer **<2.0 dex**	Control Titer **>5.0 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

Hemaggiutination	Antigen Source	Erythrocytes (species used)
No	**SMB ext. by sucrose-acetone**	**Goose**
pH Range **6.0-7.0**	pH Optimum	
Temperature Range **RT**	Temperature Optimum	

Remarks

Serologic Methods Recommended
CF, PRNT

Footnotes

Section V - Antigenic Relationship and Lack of Relationship to Other Viruses

Complement-fixation tests showed that Itimirim virus was closely related to Guaratuba virus and slightly less so to Bertioga and Mirim viruses, all members of the Guama serogroup.
Results of serum dilution-plaque reduction neutralization tests, in Vero cells, with seven Guama serogroup viruses, Guaratuba, Mirim, and Minatitlan viruses and four isolates from Brazil.

		Titer * of Antibody to:						
Virus	**Strain**	**SPAn 47817**	**SPAn 64706**	**SPAn 64962**	**76V- 25643**	**BER**	**GTB**	**MIR**
Itimirim	SPAn 47817	>1280	0	0	0	0	0	40
	SPAn 64706	0	640	0	0	0	320	0
Cananeia	SPAn 64962	0	0	640	0	0	0	0
	76V-25643	0	0	0	640	320	0	0
Bertioga	SPAn 1098	0	0	0	640	320	0	0
Guaratuba	SPAn 12252	0	>1280	0	0	0	320	0
Mirim	BeAn 7722	0	0	0	0	0	0	320
Guama	BeAn 277	0	0	0	0	0	0	0
Bimiti	TR 8362	0	0	0	40	0	0	0
Moju	BeAr 12590	0	0	0	0	0	0	0

Catu	BeH 151	0	0	0	0	0	0	0
Mahog. Ham	Fe4-2S	0	0	0	0	0	40	0
Ananindeua	BeAn 109303	0	0	0	0	0	0	0
Minatitlan	M67U5	0	0	0	0	0	0	0

		Titer * of Antibody to:						
Virus	**Strain**	**GMA**	**BIM**	**MOJU**	**CATU**	**MH**	**ANU**	**MNT**
Itimirim	SPAn 47817	0	0	40	0	0	0	0
	SPAn 64706	0	0	0	0	0	0	0
Cananeia	SPAn 64962	0	0	0	0	0	0	0
	76V-25643	0	0	40	0	0	0	0
Bertioga	SPAn 1098	0	0	0	0	0	0	0
Guaratuba	SPAn 12252	0	0	0	0	0	0	0
Mirim	BeAn 7722	0	0	0	0	0	0	0
Guama	BeAn 277	>1280	0	0	0	0	0	0
Bimiti	TR 8362	0	>1280	0	0	0	0	0
Moju	BeAr 12590	0	0	320	0	0	0	0
Catu	BeH 151	0	0	40	640	0	0	0
Mahog. Ham.	Fe4-2S	160	0	40	0	>1280	0	0
Ananindeua	BeAn 109303	160	0	0	0	0	80	0
Minatitlan	M67U5	0	0	0	0	0	0	>1280

* Reciprocal of highest dilution producing >90% reduction; 0 = <40.

Section VI - Biologic Characteristics

Virus Source (all VERTEBRATE isolates)
Blood (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	
		Day (c)	Extent (d)	Titer TCD50/ml (e)	Day (c)	Size (f)	Titer PFU/ml (e)	+/- (g)	
Vero (CL)	SM5	4-5	CPE	7.0**	4-5	1 mm	7.0**		
Vero (CL)	Orig				6	1 mm			
Duck embryo (PC)						No plaques			

** 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
Oryzomys sp. (blood)	1/>500		Iguape County, State of Sao Paulo, Brazil

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)	SM 5	ic	Paralysis, death	4-5	7.0
Mice (nb)		ip	Paralysis, death	5-6	4.8
Mice (nb)		sc			
Mice (wn)	SM 4	ic	Antibody		
Mice (wn)	SM 6	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)

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)
Brazil

Suspected (Antibody only detected)

Section XIII - References

1. Calisher, C.H. et al. 1983. Am. J. Trop. Med. Hyg. 32:424ö431.

Remarks