Virus Name: Iaco	Abbreviation: IACOV

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
Bunyamwera

SECTION I - Full Virus Name and Prototype Number

Prototype Strain Number / Designation
BeAn 314206

Accession Number

Original Date Submitted
9/26/1984

Family
Bunyavirus

Genus

Information From
F.P. Pinheiro and Amelia P.A.T. Rosa

Address
Instituto Evandro Chagas, FSESP, Ministry of Health, CP-621, Belem, Para, Brazil

Information Footnote
Reviewed by editor

Section II - Original Source

Isolated By (name)
Gilberta Bensabath

Isolated at Institute
Instituto Evandro Chagas

Host Genus
Wyeomyia spp., pool of 25

Species

Host Age/Stage
adult

Sex
Female

Isolated From

Isolation Details

Signs and Symptoms of Illness

Arthropod
Depleted

Time Held Alive before Inoculation
about 2 hours

Collection Method
human balt

Collection Date
6/14/1976

Place Collected (Minimum of City, State, Country)
Manuel Urbano road, km. 8, Sena Madureira

Latitude
9° 3' S

Longitude
68° 39' W

Macrohabitat
tropical rain forest

Microhabitat
ground level

Method of Storage until Inoculated
liquid nitrogen (-196dC)

Footnotes

Section III - Method of Isolation

Inoculation Date
5/20/1977

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) **1:1000**	After Treatment Titer **3.6 dex**	Control Titer **4.6 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

Hemaggiutination	Antigen Source	Erythrocytes (species used)
Yes	**SMB ext. by sucrose-acetone**	**goose**
pH Range	pH Optimum	
5.8 - 7.0	**6.0**	
Temperature Range	Temperature Optimum	
room, 37dC		

Remarks

Serologic Methods Recommended
HI, CF, and NT

Footnotes

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

BeAr 314206 is a member of the Bunyamwera group as shown below:

Complement-Fixation Test

Antigens	Sera								
	BeAr 314206	SOR	Macaua	BeAr 328208	(Tucunduba)	MAG	KRI	GRO	Gr. Bunyamwera
BeAr 314206	>256/>256[a]	8/>=256	8/>256	4/256	0	0	0	0	4/8
Sororoca	16/64	256/>256	8/64	16/>=256	0	0	0	0	>=16/>=8
Macaua	16/>=256	16/>=256	256/>256	0	0	0	0	0	8/>=8
BeAr 328208	16/32	64/64	8/32	64/64	0	0	0	8/>=8	>=16/>=8
(Tucunduba)	0	16/>=256	16/>=256	0	64/>256				>=16/>=8

[a] Serum titer/antigen titer; 0 = <4/<4

At YARU, BeAr 314206 CF antigen did not react with hyperimmune sera against Batai, Germiston, Ilesha, Lokern, Main Drain, Northway, Tensaw, Playas, Bunyamwera and Santa Rosa viruses. Antigenic relationship was demonstrated with Tlacotalpan, Anhembi, Birao and Shokwe viruses. PRNT in Vero cells gave the following results:

Plaque Reduction Neutralization Test

Viruses	Sera						
	BeAr 314206	Macaua	BeAr 328208	ANH	BIR	Shokwe	SOR
BeAr 314206	2048[b]	8	64-128	512	<8	<8	32-64
Macaua	8	64-128	<8	8	8	<8	<8
BeAr 328208	32	16	128	8	<8	<8	32-64
Anhembi	16			512			
Sororoca	16	<8	32-64				32-64

[b] Reciprocal of hightest dilution giving 80% plaque reduction in Vero cell cultures

Section VI - Biologic Characteristics

Virus Source (all VERTEBRATE isolates)

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)	SMB 3	4	4+		5	2mm	6.7 [c]		

[c] 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
Wyeomyia spp.	1/16,600		Sena Madureira (several sites) Acre, Brazil
Wyeomyia aporonoma	0/211		
Wyeomyia melanocephala	0/13		
Sabethes	0/21,000		
Other Culicidae	0/128,968		
Phlebotomine flies (female)	0/796		
Phlebotomine flies (male)	0/799		

Iaco virus was not isolated from blood or viscera of the following animals captured in the Sena Madureira area: 252 marsupials, 945 rodents, 17 primates, 1 edentate, 63 bats, 173 reptiles, 457 wild birds and 640 domestic birds.

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)	SMB 4	ic 0.02	illness, death	2.8	
mice (nb)		ip 0.02	illness, death	4.0	
mice (nb)		sc			
mice (wn)		ic 0.03	illness, death	5.2	
mice (wn)		ip 0.03	survived, antibodies		
mice (nb)	SMB 2	ic 0.02	death		8.4

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)
Acre

Suspected (Antibody only detected)

Remarks