Virus Name: Urucuri		Abbreviation: URUV
Status **Possible Arbovirus**	Select Agent **No**	SALS Level **2**

SALS Basis
Results of SALS surveys and information from the Catalogue.

Other Information

Antigenic Group
Phlebotomus Fever

SECTION I - Full Virus Name and Prototype Number

Prototype Strain Number / Designation
BeAn 100049

Accession Number

Original Date Submitted
5/8/1984

Family
Bunyaviridae

Genus
Phlebovirus

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

Address
Instituto Evandro Chagas, FSESP, Brazilian Ministry of Health, CP 66 000 Belem, Brazil

Information Footnote
Revised

Section II - Original Source

Isolated By (name)
Belem Virus Laboratory

Isolated at Institute
Belem, Para, Brazil

Host Genus
Proechimys guyannensis (1)

Species

Host Age/Stage
Young

Sex
Male

Isolated From	Isolation Details
Whole Blood	

Signs and Symptoms of Illness
No

Arthropod

Time Held Alive before Inoculation

Collection Method
Unknown

Collection Date
4/19/1966

Place Collected (Minimum of City, State, Country)
Utinga forest, Belem, Brazil

Latitude
1° 28' S

Longitude
48° 27' W

Macrohabitat
Watershed forest

Microhabitat
Forest floor

Method of Storage until Inoculated
At -60dC

Footnotes

Section III - Method of Isolation

Inoculation Date
4/20/1966

Animal (Details will be in Section 6)
nb mice

Route Inoculated
Intracerebral

Reisolation
Not tried

Other Reasons
Four more strains isolated from Proechimys guyannensis captured in the same area.

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) **1:2**	After Treatment Titer **1.3 dex**	Control Titer **3.8 dex**
Lipid Solvent (chloroform)	After Treatment Titer	Control Titer
Lipid Solvent (deoxycholate) **1:1000**	After Treatment Titer **1.0 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)
Yes	**SMB ext. by sucrose-acetone + protamine sulfate**	**Goose**
pH Range **5.8-6.2**	pH Optimum **6.0**	
Temperature Range	Temperature Optimum **Room temperature**	

Remarks

Serologic Methods Recommended
CF, HI, NT

Footnotes

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

Related by CF and HI to Phlebotomus fever group viruses [1] . See tables below. Serologically distinct by CF and NT from the following viruses of the Phlebotomus group: Frijoles, Caimito, Nique, Aguacate, Chilibre, Cacao, Buenaventura, Punta Toro, Chagres, Icoaraci, Candiru, Itaporanga, Pacui, Anhanga, Bujaru, Arumowot, SFS, SFN, Gabek Forest, Karimabad, Salehabad [4] .

COMPLEMENT-FIXATION

Antigens	Sera URU	ICO	BUJ	ITP	ANH	CDU	PHL Gr [b]
Urucuri	>16/>16 [a]						4/4
Icoaraci	0	>16/>16					>16/>16
Bujaru	0		>16/>16				>16/>16
Itaporanga	0			>16/>16			0
Anhanga	0				>16/>16		>16/>16
Candiru	0					>16/>16	>16/>16

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

[b] A PHL grouping immune ascitic fluid prepared by the Yale Arbovirus Research Unit.

HI RESULTS

Sera	Antigens (4 HAU)					
	URU	ICO	BUJ	ITP	ANH	CDU
Urucuri (4i)	160	80	40	40	<20	<20
Icoaraci (2i)	20	80				
Bujaru (6i)	<20		80			
Itaporanga (3i)	<20			320		
Anhanga (4i)	<20				40	
Candiru (4i)	<20					80
PHL Gr. [c]	80	160	320	160	80	80

[c] A PHL grouping immune ascitic fluid prepared by the Yale Arbovirus Research Unit.

In addition, see References [5] and [6] .

Section VI - Biologic Characteristics

Virus Source (all VERTEBRATE isolates)
Brain and viscera (LV), 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)	P-38	3-4	4+	7.0 (d) (2)					
Vero (CL)	SM4, Vero 2				5-6	pinpoint and larger (4)			
Vero (CL)	P-41	3-4	4+	8.5 (2)					
Chick embryo (PC)	P-4					No plaques (2)			

(d) 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
Proechimys guyannensis (blood)	5	101/828 HI	Utinga and Embrapa, Belem, Para, Brazil
Proechimys guyannensis		14/201 CF	
Proechimys guyannensis (blood)	1	1/185 HI	Serra do Navio, Amapa, Brazil
Proechimys longicaudatus	1		Curua-Una, Santarem, Para, Brazil; 1977
Proechimys spp.		42/240 HI	Maraba and Itaituba, Para, Brazil
Proechimys		1/31 HI	C. Porteira, km. 71, Oriximina, Para, Brazil
Oryzomys spp.		1/931 HI	Para State, Brazil
Nectomys spp.		0/111 HI	

Oecomys spp.		0/44 HI	Para State and Amapa, Brazil
Dasyprocta spp.		2/18 HI	Para State, Brazil
Neacomys spp.		0/11 HI	
Other wild rodents		1/20 HI	
Marsupials		0/983 HI	Para State and Amapa, Brazil
Marsupials		0/38 CF	Utinga, Belem, Para, Brazil
Primates		3/153 HI	Para State, Brazil
Edentate		1/9 HI	
Bats		0/208 HI	
Ungulates		0/9 HI	
Birds		1/2,652 HI	
Reptiles		0/7 HI	

NOTE: Most HI positive sera also reacted with Icoaraci, Bujaru, and Itaporanga antigens; in the CF test, the positive reactions were specific to Urucuri antigen (3). No isolations from 43,665 pools of arthropods (mosquitoes, ticks, Phlebotomine flies, Culicoides) processed from 1966 to 1976.

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)	P-3	ic	Death	6.8	
Mice (nb)		ip	Death	9.0	
Mice (nb)		sc			
Mice (wn)		ic	Antibody		
Mice (wn)		ip	Antibody		
Mice (nb)	P-41	ic	Death	3.3	7.7
Mice (nb)		ip	Death	6.3	
hamster	P-28	ic	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. Belem Virus Laboratory, Belem, Brazil. Unpublished data.
2. Pinheiro, F.P. Unpublished data.
3. Travassos da Rosa, A.P.A. Unpublished data.
4. Tesh, R.B., et al. 1975. Am. J. Trop. Med. Hyg. 24:135-144.
5. Tesh, R.B., et al. 1982. Am. J. Trop. Med. Hyg. 31:149-155.
6. Travassos Da Rosa, A.P.A., et al. 1983. Am. J. Trop. Med. Hyg. 32:1164-1171.

Remarks