

Status: Possible Arbovirus

Select Agent:
SALS Basis: S

SALS Level: 2

HEPA Filtration:

Antigenic Group: Phlebotomus Fever

Taxonomic status: *Phlebovirus*

Other Information: None.

Section I - Full Virus Name and Prototype Number**Full Virus Name:****Prototype Number:**

Urucuri

BeAn 100049

Information from: F. Pinheiro and Amelia P.A.T. Rosa**Date:**

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5/8/1984

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

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Revised

Section II - Original Source**Isolated by:** Belem Virus Laboratory **at:** Belem, Para, Brazil**Genus and species:** Proechimys guyannensis (1) **Sentinel X****Age/Stage:** Young **Sex:** M

Isolated From	Isolation detail
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Signs and symptoms of illness: No**Arthropod engorged depleted gravid****Time held alive before inoculation:****Collection date:** 4/19/1966 **Method:** Unknown**Place collected:** 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 and Validity****Inoculation Date:** 4/20/1966**Animal:** nb mice**Embryonated egg:****Tissue Culture:**

(Details in Section VI - Biologic Char.)

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 (See Section II):** Not tested**Test used:** HI CF NT**Other:****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:
Nucleocapsid density Sedimentation coefficient:
Sedimentation coefficient:

Stability of infectivity (effects) pH

Lipid solvent:
(ether) 1:2 After treatment titer 1.3 dex Control titer 3.8 dex
(chloroform) After treatment titer Control titer
Detergent:
(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) 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 + protamine sulfate
Erthrocytes Goose pH range 5.8-6.2 pH optimum 6.0
Temperature optimum Room temperature range
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, Anhangá, Bujaru, Arumowot, SFS, SFN, Gabek Forest, Karimabad, Salehabad [4].

COMPLEMENT-FIXATION

Antigens	Sera						PHL Gr ^b
	URU	ICO	BUJ	ITP	ANH	CDU	
Urucuri	>16/>16 ^a						4/4
Icoaraci	0	>16/>16					>16/>16
Bujaru	0		>16/>16				>16/>16
Itaporanga	0			>16/>16			0
Anhangá	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		
Anhangá (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

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 TCID ₅₀ /ml (e)	Day (c)	Size (f)	Titer PFU/ml (e)		
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

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, Oriximinha, 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 (Record 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) Days	Transmission by bite (d)		Assay of arthropod, log10/ml (e)		
	Feeding	Injected		°C	Host	Ratio	Whole	Organ

Section X - Histopathology

Character of lesions:

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):

Brazil

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.

Section XIV - Remarks
