

Status: Possible Arbovirus

Select Agent:

SALS Level: 3

SALS Basis: IE

Antigenic Group: Phlebotomus Fever

HEPA Filtration:

Taxonomic status: *Phlebovirus*

Other Information: None.

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

BeAr 352492

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

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10/12/1984

Address: Instituto Evandro Chagas, FSESP, Ministry of Health, CP-621, 66.000, Belem, Para, Brazil

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Reviewed by editor

Section II - Original Source**Isolated by:** F. Pinheiro and Amelia P.A.T. Rosa**at:** Inst. Evandro Chagas**Genus and species:** Lutzomyia sp. (1)**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: 1 hour

Collection date: 7/24/1978 Method: Human bait, night

Place collected: Km 4, Cachoeira Porteira, Trombetas river, Brazil

Latitude: 1° 2' " S Longitude: 57° 6' " W

Macrohabitat: Tropical rain forest

Microhabitat: Ground

Method of storage until inoculated: Liquid nitrogen and -60dC electrical freezer

Footnotes:

Section III - Method of Isolation and Validity**Inoculation Date:** 2/9/1979**Animal:** nb mice **Embryonated egg:** **Tissue Culture:**

(Details in Section VI - Biologic Char.)

Route inoculated: Intracerebral **Reisolation:** No**Other reasons:** First strain of this virus isolated in our laboratory**Homologous antibody formation by source animal (See Section II):****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: 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 1.6 dex Control titer 3.5 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 No Antigen source SMB ext. by sucrose-acetone + sonication
Erthrocytes Goose pH range 5.8-7.0 pH optimum
Temperature optimum range 25-27dC
Remarks
Serologic methods recommended CF, NT
Footnotes:

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

Turuna virus is a member of the Phlebotomus fever group by CF and NT (tests performed at the Evandro Chagas Institute):

Antigens	CF Testing									
	Ar 352492	ICO	PAC	BUJ	ITP	URU	ANH	CDU	ITA	ALE
Ar 352492	>256/>256 ^a	0	0	0	0	0	0	16/16	32/16	16/16
Icoaraci	0	256/>256		0	0	0	0	0	0	0
Pacui	0	0	>16/>16	0	0	0	0	0	0	0
Bujaru	0	0	0	32/64	0	0	0	0	0	0
Itaporanga	0	0	0	0	32/64	0	0	0	0	0
Urucuri	0	0	0	0	0	256/>256	0	0	0	0
Anhangas	0	0	0	0	0	0	64/>256	0	0	0
Candiru	16/>256	0	0	0	0	0	0	>256/>256	256/>256	0
Itaituba	32/16	0	0	0	0	0	0	>256/16	>256/16	8/4
Alenquer	16/>256	0	0	0	0	0	0	0	16/>256	>256/>256

^a Antibody/antigen titers; 0 = <4/<4

Viruses	NT Testing (Infant Mice, ic Route)									
	Ar 352492	ICO	PAC	BUJ	ITP	URU	ANH	CDU	ITA	ALE
Ar 352492	2.1 ^b	1.1	0.0	<0.3	<0.2	1.2	0.3	<0.3	1.2	1.0
Candiru	1.4							3.4		
Itaituba	1.6							4.3		
Alenquer	<1.5								2.7	

^b LNI in dex

Icoaraci: ICO, Pacui: PAC, Bujaru: BUJ, Itaporanga: ITP, Urucuri: URU, Anhangas: ANH, Candiru: CDU, Itaituba: ITA, Alenquer: ALE

Section VI - Biologic Characteristics

Virus source (all VERTEBRATE isolates): Liver and spleen (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 TCD50/ml (e)	Day (c)	Size (f)		+/- (g)
Vero (CL)	SMB 2	5	4+	6.5 (c)				
LLC-MK2 (CL)		4	4+	>4.5				

(c) 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
Lutzomyia sp. (females) (1976-79)	1/51 (2,813 insects)		Cach. Porteira, Trombetas River, Para, Brazil
Lutzomyia sp. (males) (1976-79)	0/7 (202 insects)		
Proechimys quayannensis		0/51 NT	
Hamsters (sentinel)		0/19 NT	
Agouti paca		1/5 NT	
Rattus rattus		0/1 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)	SMB 2	ic 0.02	Death	5.0	
Mice (nb)	SMB 4	ip 0.02	1 of 6 died		
Mice (nb)		sc			
Mice (wn)		ic 0.03	Antibody		
Mice (wn)		ip 0.03	Antibody		
Mice (nb)	SMB 2	ic 0.02	Death	5.5	
Mice (nb)	SMb 6	ic 0.02	Death	7.3	

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

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. Travassos da Rosa, A.P.A., et al. 1983. Am. J. Trop. Med. Hyg. 32:1164-1171.

Section XIV - Remarks
