

Virus Name: Parana		Abbreviation: PARV
Status Not Arbovirus	Select Agent No	SALS Level 2
SALS Basis Level 2 arenaviruses are not known to cause serious acute disease in man and are not acutely pathogenic for laboratory animals, including primates. Survey experience is sufficient to conclude that laboratory aerosol infection does not occur in the course of routine work with cell cultures and animals not subject to chronic infection. In view of reported high frequency of laboratory aerosol infection that occurred in workers manipulating high concentrations of Pichinde virus, it is strongly recommended that work with high concentrations of Level 2 arenaviruses be done at Level 3.		
Other Information		
Antigenic Group Tacaribe		

SECTION I - Full Virus Name and Prototype Number

Prototype Strain Number / Designation 12056	Accession Number	Original Date Submitted 2/14/1985
Family Arenaviridae	Genus Arenavirus	
Information From Patricia Ann Webb	Address Middle America Research Unit, Box 2011, Balboa Heights, Canal Zone	
Information Footnote Reviewed by editor		

Section II - Original Source

Isolated By (name) Patricia Ann Webb (1)	Isolated at Institute Middle America Research Unit	
Host Genus Oryzomys buccinatus	Species	Host Age/Stage Adult
Sex Female		
<u>Isolated From</u>	<u>Isolation Details</u>	
Organs/Tissues	Kidney	
Signs and Symptoms of Illness None	Arthropod	
Time Held Alive before Inoculation		
Collection Method Live trapped	Collection Date 8/16/1965	
Place Collected (Minimum of City, State, Country) San Francisco, Misiones, Paraguay		
Latitude 26° 25' S	Longitude 56° 32' W	
Macrohabitat Mature secondary forest	Microhabitat Forest floor	Method of Storage until Inoculated Liquid nitrogen and -70dC Revco
Footnotes		

Section III - Method of Isolation

Inoculation Date 9/20/1966	
Animal (Details will be in Section 6) nb hamster	
Route Inoculated Intracerebral	Reisolation Yes
Other Reasons	
Homologous Antibody Formation by <u>Source Animal</u> Not tested	
Test(s) Used	
Footnotes	

Section IV - Virus Properties

Physicochemical RNA		
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)	
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<u>Stability of Infectivity (effects)</u>		
pH (infective range)		
Lipid Solvent (ether - % used to test)	After Treatment Titer	Control Titer
Lipid Solvent (chloroform)	After Treatment Titer <1.3 dex	Control Titer 7.8 dex
Lipid Solvent (deoxycholate)	After Treatment Titer	Control Titer
Other (formalin, radiation)		
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<u>Virion Morphology</u>		
Shape Pleomorphic to spherical	Dimensions 110 nm	
Mean nm	Range 60-280 nmnm	
Measurement Method Electron microscopy (2)	Surface Projections/Envelope Club-shaped projections; envelope observed (2)	Nucleocapsid Dimensions, Symmetry Intravirionic dense granules, no svmmetrv (2)

Morphogenesis

Site of Constituent Formation in Cell

Site of Virion Assembly

Site of Virion Accumulation

Inclusion Bodies

Other

Intracytoplasmic inclusions (2)

Hemagglutination

Hemagglutination

Antigen Source

Erythrocytes (species used)

Not tried

pH Range

pH Optimum

Temperature Range

Temperature Optimum

Remarks

Serologic Methods Recommended

CF and NT

Footnotes

Immune Sera	Parana Antigen		Parana Hamster Immune Serum	
	Ht/Ho	CF Ratio	Ht/Ho	CF Ratio
Machupo	32/256	1/8	32/512	1/16
Junin	16/16	1/1	32/512	1/16
Tacaribe	8/64	1/8	32/512	1/16
Amapari	16/64	1/4	32/512	1/16
Tamiami	16/128	1/8	32/512	1/16
Pichinde	16/128	1/8	64/512	1/8

Neutralization

Plaque reduction in Vero cells. Serum NT antibody titer Ho =64

Ht =<4

Direct Immunofluorescence

No reaction with other Tacaribe group members.

Indirect Immunofluorescence

1+ fluorescence with Parana antiserum against LCM-infected cells (3T3)

(viral antigen)

Section VI - Biologic Characteristics

Virus Source (all VERTEBRATE isolates)
Spleen (LV), kidney (LV).

Lab Methods of Virus Recovery (ALL ISOLATIONS)
Newborn hamsters and Vero cell cultures

Cell system (a)	Virus passage history (b)	Evidence of Infection						
		CPE			PLAQUES			Growth Without CPE +/- (g)
		Day (c)	Extent (d)	Titer TCD50/ml (e)	Day (c)	Size (f)	Titer PFU/ml (e)	
Vero cells (CL)	SHB 4					Plaques	7.2 *	
* 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 buccinatus	3/4	0/4 NT	Misiones, Paraguay
Oryzomys nigripes	0/4	0/4 NT	
Zygodontomys sp.	0/3	0/5 NT	
Rattus sp.	0/5	0/10 NT	
Mus sp.	0/47	0/47 NT	
Phyllotis sp.	0/41	0/41 NT	
Man		0/412 NT	Misiones, Boqueron, Paraguay

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 log ₁₀ /ml
Mice (nb)		ic	Illness	10-15	
Mice (nb)		ip			
Mice (nb)		sc			
Mice (wn)		ic			
Mice (wn)		ip	None observed		
hamster (nb)		ic 0.02	Death	8	8.2
hamster (ad)		ip	No illness observed; CF antibody		

Section IX - Experimental Arthropod Infection and Transmission

Arthropod species & virus source(a)	Method of Infection log ₁₀ /ml (b)		Incubation period (c)		Transmission by bite (d)		Assay of arthropod, log ₁₀ /ml (e)		
	Feeding	Injected	Days	°C	Host	Ratio	Whole	Organ	System

Section X - Histopathology

Character of lesions (specify host)		
<u>Inclusion Bodies</u>	<u>Intranuclear</u>	
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) Paraguay
Suspected (Antibody only detected)

Section XIII - References

1. Webb, P.A., et al. 1970. Arch. ges. Virusforsch. 32:379-388. 2. Murphy, F.A., et al. 1970. J. Virol 6:507-518.
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Remarks

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