Virus Name: Agua Preta	Abbreviation: APV

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
Ungrouped

SECTION I - Full Virus Name and Prototype Number

Prototype Strain Number / Designation
BeAn 67949

Accession Number

Original Date Submitted
10/11/1984

Family
Herpesviridae

Genus
Herpeslike

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

Address
Instituto Evandro Chagas, FSESP-Ministry of Health, CP-621, 66000, Belem, Para, Brazil

Information Footnote
Reviewed by editor

Section II - Original Source

Isolated By (name)
Belem Virus Laboratory

Isolated at Institute
Instituto Evandro Chagas

Host Genus
Carollia subrufa

Species

Host Age/Stage
Adult

Sex
Female

Isolated From	Isolation Details
Whole Blood	

Signs and Symptoms of Illness

Arthropod

Time Held Alive before Inoculation

Collection Method
Unknown

Collection Date
5/25/1964

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

Latitude
1° 28' S

Longitude
48° 27' W

Macrohabitat
Watershed forest

Microhabitat
Ground level, rodent trap with banana bait

Method of Storage until Inoculated
-60dC

Footnotes

Section III - Method of Isolation

Inoculation Date
6/3/1964

Animal (Details will be in Section 6)
nb mice

Route Inoculated
Intracerebral

Reisolation
Not tried

Other Reasons
Antigenically unrelated to other viruses in this laboratory

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)	After Treatment Titer	Control Titer
Lipid Solvent (chloroform)	After Treatment Titer	Control Titer
Lipid Solvent (deoxycholate) **1:1000**	After Treatment Titer **<0.5 dex**	Control Titer **1.5 dex**

Other (formalin, radiation)

Virion Morphology

Shape **Ellipsoidal; resembles a herpesvirus (1,2);**	Dimensions **90-100 nm**
Mean nm	Range nm

Measurement Method **Thin-section electron microscopy (1,2)**	Surface Projections/Envelope	Nucleocapsid Dimensions, Symmetry

Morphogenesis

Site of Constituent Formation in Cell	Site of Virion Assembly	Site of Virion Accumulation
	Nucleus (1,2)	

Inclusion Bodies	Other
Intranuclear and intracytoplasmic (1,2)	

Hemagglutination

Hemaggiutination	Antigen Source	Erythrocytes (species used)
No	**SMB ext. by sucrose-acetone**	**Goose**

pH Range	pH Optimum
5.8-7.0	

Temperature Range	Temperature Optimum
25dC-27dC	

Remarks

Serologic Methods Recommended
CF

Footnotes

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

A sucrose-acetone extracted brain antigen reacted with homologous serum but not with sera or ascitic fluid of groups A , B , C, Guama, Capim, Bunyamwera , Phlebotomus and of viruses Tacaiuma, Pacui, Mirim, Acara, Timbo, Chaco, Tembe, Bujaru, Icoaraci, Itaporanga, Candiru, Oropouche, GD VII, Cocal, Utinga, Melao, Serra do Navio, Irituia, Marco, Araguari, Kwatta, Flexal, Aruac, Inhangapi, EMC, Triniti, Herpes simplex, Piry, Belem, Pacora, Amapari, Ieri, Lukuni, Cotia-like, Mosqueiro, Turlock, rabies , Jurona and BeAr 263191, Jacareacanga, Mojui dos Campos, Santarem, Para, Itupiranga, BeAr 316858, Cuiaba, BeAn 228950, Mapuera , SPH 30562. In addition, it was negative against the following grouping reagents from NIH: groups A , B , Bunyamwera , Simbu , Kemerovo, Phlebotomus, California, Tacaribe, and VSV, polyvalents 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 12, Bwamba, rabies, Patois, and Palyam. All tests above were performed at the Evandro Chagas Institute.
CF and HI (using immune serum of this strain) were done at YARU against other strains isolated from bats and the results were also negative. These strains were: Rio Bravo , Burns, MML, Entebbe , Bukalasa , Dakar , BP-180, Dakar bat , Lagos bat , and Kern Canyon [3] .

Section VI - Biologic Characteristics

Virus Source (all VERTEBRATE isolates)
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)	SMB 12		No CPE					
HEp-2 (CL)			No CPE					

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
Bat (blood)	1/1,063	0/3 CF	Utinga forest, Para, Brazil
Bat	0/1,149	0/29 CF	EMBRAPA, Para, Brazil
Bat	0/44		Belem, Para, Brazil
Bat	0/4,638		Other areas of the Amazon region, Para, Brazil
Bat		0/96 CF	Territory Federal, Amapa, Brazil
Philander opossum		0/16 CF	
Metachirus		0/9 CF	
Didelphis		0/16 CF	
Marmosa sp.		0/9 CF	
Monodelphis		0/8 CF	
Caluromys philander		0/1 CF	
Oryzomys spp.		0/16 CF	
Proechimys quyannensis		0/15 CF	
Neacomys		0/11 CF	
Oecomys sp.		0/2 CF	
Humans		0/6 CF	
Reptilia		0/2 CF	
Domestic fowl		0/10 CF	

* Blood, viscera, and salivary glands tested for virus.

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 2	ic 0.02	Death	7.7	
Mice (nb)		ip 0.02	Death	8.2	
Mice (nb)		sc			
Mice (wn)		ic 0.03	Antibody		
Mice (wn)		ip 0.03	Antibody		

Section IX - Experimental Arthropod Infection and Transmission

Section X - Histopathology

Character of lesions (specify host)
Acidophilic inclusion bodies, both nuclear and cytoplasmic, in liver and brain of infected baby mice. Inclusions were relatively large and not typical of rabies. Pulmonary lesions regularly produced with occasional lesions of the kidney, myocardium and lymphatic ganglion (4).

Inclusion Bodies
Lower Vertabrates

Intranuclear
Lower Vertabrates

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)
Para State, Amazon region of Brazil

Suspected (Antibody only detected)

Section XIII - References

1. Araujo, R. and Bullon, A.1972. Virchows Arch Abt. A Path. Anat. 355:238-252.
2. Huth, F. and Araujo, R. 1971. Virchows Arch Abt. B Zellpath. 9:153-163.
3. Karabatsos, N. Personal communication. 1980.
4. Dias, L.B. Personal communication.

Remarks