

Virus Name: Agua Preta		Abbreviation: APV
Status <b>Possible Arbovirus</b>	Select Agent <b>No</b>	SALS Level <b>3</b>
SALS Basis <b>Insufficient experience with virus; i.e., experience factor from SALS surveys was less than 500 in laboratory facilities with low biocontainment.</b>		
Other Information		
Antigenic Group <b>Ungrouped</b>		

#### SECTION I - Full Virus Name and Prototype Number

Prototype Strain Number / Designation <b>BeAn 67949</b>	Accession Number	Original Date Submitted <b>10/11/1984</b>
Family <b>Herpesviridae</b>	Genus <b>Herpeslike</b>	
Information From <b>F.P. Pinheiro and Amelia P.A.T. Rosa</b>	Address <b>Instituto Evandro Chagas, FSESP-Ministry of Health, CP-621, 66000, Belem, Para, Brazil</b>	
Information Footnote <b>Reviewed by editor</b>		

#### Section II - Original Source

Isolated By (name) <b>Belem Virus Laboratory</b>	Isolated at Institute <b>Instituto Evandro Chagas</b>	
Host Genus <b>Carollia subrufa</b>	Species	Host Age/Stage <b>Adult</b>
Sex <b>Female</b>		
<u>Isolated From</u>  <b>Whole Blood</b>	<u>Isolation Details</u>	
Signs and Symptoms of Illness	Arthropod	
Time Held Alive before Inoculation		
Collection Method <b>Unknown</b>	Collection Date <b>5/25/1964</b>	
Place Collected (Minimum of City, State, Country) <b>Utinga forest, Belem, Para, Brazil</b>		
Latitude <b>1° 28' S</b>	Longitude <b>48° 27' W</b>	
Macrohabitat <b>Watershed forest</b>	Microhabitat <b>Ground level, rodent trap with banana bait</b>	Method of Storage until Inoculated <b>-60dC</b>
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

Hemagglutination

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, Trinita, 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 +/- (g)
		Day (c)	Extent (d)	Titer TCD50/ml (e)	Day (c)	Size (f)	Titer PFU/ml (e)	
Vero (CL)	SMB 12		No CPE					
HEp-2 (CL)			No CPE					

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 quyanensis		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 Vertebrates**

Intranuclear

**Lower Vertebrates**

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