Virus Name: Pixuna	Abbreviation: PIXV

Status
Possible Arbovirus

Select Agent
No

SALS Level
2

SALS Basis
Results of SALS surveys and information from the Catalogue.

Other Information

Antigenic Group
A

SECTION I - Full Virus Name and Prototype Number

Prototype Strain Number / Designation
BeAr 35645

Accession Number

Original Date Submitted
1/27/1985

Family
Togaviridae

Genus
Alphavirus

Information From
Robert E. Shope

Address
Yale Arbovirus Research Unit, New Haven, Connecticut

Information Footnote
Reviewed by editor

Section II - Original Source

Isolated By (name)
Belem Virus Laboratory (1)

Isolated at Institute
Belem, Para, Brazil

Host Genus
Anopheles (Stethomyia) nimbus

Species

Host Age/Stage
Adult

Sex
Female

Isolated From

Isolation Details

Signs and Symptoms of Illness

Arthropod

Time Held Alive before Inoculation

Collection Method
Human bait

Collection Date
9/19/1961

Place Collected (Minimum of City, State, Country)
Belem-Brasilia Highway, km 94, Brazil

Latitude
3° S

Longitude
48° W

Macrohabitat
Virgin forest

Microhabitat
Ground level

Method of Storage until Inoculated
At -60dC

Footnotes

Section III - Method of Isolation

Inoculation Date
9/25/1961

Animal (Details will be in Section 6)
nb mice

Route Inoculated
Intracerebral

Reisolation
No

Other Reasons

Homologous Antibody Formation by Source Animal

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 **<4.5 dex**	Control Titer **8.5 dex**

Other (formalin, radiation)

Virion Morphology

Shape	Dimensions	
Mean nm	Range nm	
Measurement Method	Surface Projections/Envelope	Nucleocapsid Dimensions, Symmetry

Morphogenesis

Site of Constituent Formation in Cell	Site of Virion Assembly	Site of Virion Accumulation
Inclusion Bodies	Other	

Hemagglutination

Hemaggiutination	Antigen Source	Erythrocytes (species used)
Yes	**SMB, serum ext. by sucrose-acetone; acetone**	**Goose**
pH Range	pH Optimum	
6.0-6.4	**6.2**	
Temperature Range	Temperature Optimum	
Remarks		
Serologic Methods Recommended		
CF, HI, NT		
Footnotes		

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

Belongs to Venezuelan equine encephalomyelitis complex in Group A; for antigenic relationships see References [1] and [6] .

Section VI - Biologic Characteristics

Virus Source (all VERTEBRATE isolates)
Pool of heart, liver, spleen and kidney (LV)(1)

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)	
Chick embryo (PC)	P-4				2-3	2 sizes	9.3* (5)		
BHK-21 (CL)					<4	Plaques	9.5 (5)		
Mouse embryo (PC)						Plaques	7.4 (5)		
Vero (CL)					3	Plaques	9.1 (4)		

* 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
Man	0/2,095		Amazon Region, Brazil
Monkeys	0/87		
Horse and cattle	0/185		
Birds	0/6,000	*	
Didelphis marsupialis	0/883	1/80 HI	Para, Brazil
Other marsupials	0/1,067	0/143 HI	
Reptiles	0/5,926		
Amphibia	0/42		
Bats	0/878		
Edentates	0/127		
Proechimys guyannensis oris (organs)	1/5,289	**	Para, Brazil (1)
Other rodents	0/5,754		Para, Brazil
Anopheles nimbus	1		
Trichoprosopon digitatum	1		

Many strains from mosquitoes reported as Pixuna in Arch. Inst. Pasteur Guyane Fr. No. 529, 1971, may be separable as new type in VEE Complex.

* Bird HI positives not confirmed by NT

** Rodent HI positives always positive in higher titer to Mucambo; Para, Brazil.

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)	P-3	ic 0.02	Death	1.4	10.2
Mice (nb)		ip 0.02	Death	2.0	
Mice (nb)		sc			
Mice (wn)		ic 0.03	Antibody		
Mice (wn)		ip 0.03	Antibody		
hamsters (ad)		ic	Death (2)		
hamsters (ad)		sc	Antibody (3)		
horse (10 mo)	P-14	sc 0.5	Leukopenia, no viremia; antibody (1)		

Section IX - Experimental Arthropod Infection and Transmission

Arthropod species & virus source(a)	Method of Infection log10/ml (b)		Incubation period (c)		Transmision by bite (d)		Assay of arthropod, log10/ml (e)		
	Feeding	Injected	Days	°C	Host	Ratio	Whole	Organ	System

Section X - Histopathology

Character of lesions (specify host)
Encephalitis and focal hepatic lesions (L.B. Dias)

Inclusion Bodies — Intranuclear

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)
Brazil

Suspected (Antibody only detected)

Section XIII - References

1. Shope, R.E., et al. 1964. Am. J. Trop. Med. Hyg. 13:723-727.
2. Srihongse, S. and Johnson, K.M. 1969. Ibid. 18:273-279.
3. Scherer, W.F. and Pancake, B.A. 1970. Am. J. Epidemiol. 91:225-229.
4. Bergold, G.H. and Mazzali, R. 1968. J. Gen. Virol. 2:273-284.
5. Pinheiro, F.P. Personal communication.
6. Calisher, C.H., et al. 1980. Intervirology 14:229-232.

Remarks