Virus Name: Caimito	Abbreviation: CAIV

Status
Possible Arbovirus

Select Agent
No

SALS Level
2

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

Other Information

Antigenic Group
Phlebotomus Fever

SECTION I - Full Virus Name and Prototype Number

Prototype Strain Number / Designation
VP-488A

Accession Number

Original Date Submitted
7/5/1984

Family
Phlebovirus

Genus

Information From
Robert B. Tesh

Address
Yale Arbovirus Research Unit

Information Footnote
Revised

Section II - Original Source

Isolated By (name)
R. Tesh and P. Peralta (1)

Isolated at Institute
Middle America Research Unit, Panama

Host Genus
Lutzomyia ylephilatrix (pool of 57)

Species

Host Age/Stage
Adults

Sex
Female

Isolated From

Isolation Details

Signs and Symptoms of Illness

Arthropod
Depleted

Time Held Alive before Inoculation
2-3 hours

Collection Method
Hand aspirator

Collection Date
1/21/1971

Place Collected (Minimum of City, State, Country)
El Aguacate, Panama Prov.

Latitude
8° 45' N

Longitude
79° 58' W

Macrohabitat
Secondary forest (abandoned coffee plantation)

Microhabitat
Aspirated from tree branches on canpy platform at 18 meters

Method of Storage until Inoculated
Liquid nitrogen, then at -60dC

Footnotes

Section III - Method of Isolation

Inoculation Date
2/25/1971

Animal (Details will be in Section 6)
(Tissue Culture)

Route Inoculated

Reisolation
Yes

Other Reasons

Homologous Antibody Formation by Source Animal

Test(s) Used

Footnotes

Section IV - Virus Properties

Physicochemical
RNA, Single Strand

Pieces (number of genome segments) **3**	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) **5%, 10 min**	After Treatment Titer **<2.2 dex**	Control Titer **5.7 dex**
Lipid Solvent (deoxycholate)	After Treatment Titer	Control Titer

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 **Not tried**	Antigen Source	Erythrocytes (species used)
pH Range	pH Optimum	
Temperature Range	Temperature Optimum	

Remarks

Serologic Methods Recommended
CF, NT

Footnotes

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

Caimito antigen (homologous titer = 64/128) did not react in CF tests with immune sera for groupd A, B, C, Phlebotomus fever, Tacaribe, Capim, Simbu, California nd Bunyamwera; or with specific antisera for Anopheles A and B, Turlock Manzanilla, VS-Indiana, VS-New Jersey, VS-Alagoas, Cocal, Piry, Chandipura, Charleville and Changuinola.
In cross-CF tests, Caimito antigen and hamster immune serum failed to react with any of the following Phlebotomus fever group antigens or specific antisera: Naples, Sicilian, Punta Toro, Chagres, Icoaraci, Candiru, Itaporanga, Darimabad, Buenaventura, Gabek Forest, Anhanga, Bujaru, Arumowot, Salehabadk, Urucuri, Frijoles, Nique, Chilibre, Cacao, Aguacate or Pacui [2] . In cross-plaque neutralization tests, Caimito virus and immune serum also failed to react with any of the following Plebotomus fever group virus and immune reagents: AGU, ANH, AMT, BUE, BUJ, CAC, CDU, CHG, CHI, FRI, GF, GOR, THE, ICO, TOS, ITA, ITP, KAR, NIQ, PT, RVF, RG, SAF, SAL, SFN, SFS, TUA, and URU. CAI immune serum (homologous titer = 40) inhibited ALE and PAC viruses to a 1:10 dilution in PRNT [2] , [3] .

Section VI - Biologic Characteristics

Virus Source (all VERTEBRATE isolates)

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

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)	Vero 2	5	3-4+		6-7	1 mm	5.7*		

* 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
Lutzomyia ylephilatrix (females)	1/24,376		Panama (1)
Lutzomyia trapidoi (males)	0/9,906		
Lutzomyia trapidoi (females)	0/63,985		
Lutzomyia sp. (males)	0/70,043		
Lutzomyia sp. (females)	0/86,202		

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)	488A	ic	death	5.5	5.9
mice (nb)	Vero 2, HB 4, MB 1	ip			
mice (nb)		sc			
mice (wn)		ic			
mice (wn)		ip			
hamster (nb)		ic 0.02	death		
hamster (wn)		ip 0.1	antibody		

NOTE: Caimito virus was originally isolated in Vero cell cultures. It required four serial blind passages (ic) in newborn hamsters before it produced illness and death.

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

Caimito virus did not multiply or survive after inoculation in Aedes albopictus or Culex quinquefasciatus mosquitoes (4).

Section X - Histopathology

Character of lesions (specify host)

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)
Panama

Suspected (Antibody only detected)

Section XIII - References

1. Tesh, R.B., et al. 1974. Am. J. Trop. Med. Hyg. 23:258-269.
2. Tesh, R.B., et al. 1975. Am. J. Trop. Med. Hyg. 24:135-144.
3. Tesh, R.B. Unpublished data.
4. Tesh, R.B. 1975. J. Med. Ent. 12:1-4.

Remarks