Virus Name: Aguacate	Abbreviation: AGUV

Status
Probable 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-175A

Accession Number

Original Date Submitted
7/3/1984

Family
Bunyaviridae

Genus
Phlebovirus

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

Host Genus
Lutzomyia (mixed species; pool of 70)

Species

Host Age/Stage
Adult

Sex
Female

Isolated From

Isolation Details

Signs and Symptoms of Illness

Arthropod
Depleted

Time Held Alive before Inoculation
Two Hours

Collection Method
Light trap

Collection Date
12/4/1969

Place Collected (Minimum of City, State, Country)
El Aguacate, Panama Prov., Panama (1)

Latitude
8° 45' N

Longitude
79° 58' W

Macrohabitat
Secondary forest (abandoned coffee plantation)

Microhabitat
Canopy (20 meters)

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

Footnotes

Section III - Method of Isolation

Inoculation Date
12/30/1969

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% 10min.**	After Treatment Titer **<2.8 dex**	Control Titer **6.0 dex**
Lipid Solvent (deoxycholate)	After Treatment Titer	Control Titer

Other (formalin, radiation)
Other strains showed 1.6 to 3.8 dex sensitivity to chloroform

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 **Yes**	Antigen Source **Infected Vero cell culture fluid**	Erythrocytes (species used) **Goose**
pH Range	pH Optimum **6.0**	
Temperature Range **22dC**	Temperature Optimum	

Remarks
Only temperature tried was 22C

Serologic Methods Recommended
CF, NT, HI

Footnotes
Only temperature tried was 22C

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

HI test: Results with Aguacate serum (homologous = 160) were Icoaraci, 20; Karimabad and Arumowot, 10; Sicilian, Chagres, Anhanga, Itaporanga, and Frijoles <10. Aguacate antigen was inhibited to a titer of 20 by Buenaventura and Icoarci sera; 10 by Punta Toro and not by Naples, Sicilian, Chagres, Frijoles, Candiru, Karimabad, Salehabad, Bujaru, Anhanga, Arumowot, and Gabek Forest [2] .
Aguacate CF antigen (homologous titer = >512/128) did not react with immune sera of groups A , B , C, Tacaribe , Capim, Simbu, California , Phlebotomus fever, and Bunyamwera ; or with specific immune sera for Manzanilla , Anopheles A and B, Turlock, Changuinola, Charleville , VS-Indiana , VS-New Jersey , VS-Alagoas , Piry , Chandipura , Naples, Sicilian, Punta Toro, Icoaraci, Candiru, Itaporanga, Pacui, Karimabad, Anhanga, Bujaru, Arumowot, Gabek Forest, Salehabad, Urucuri, Frijoles, Cacao, Caimito, Nique, Chilibre, and Buenaventura [2] .
Aguacate hyperimmune hamster serum did not react in CF tests with suckling hamster brain antigens for Pacui, Changuinola, Naples, Sicilian, Punta Toro, Chagres, Icoaraci, Candiru, Itaporanga, Karimabad, Anhanga, Bujaru, Arumowot, Gabek Forest, Buenaventura , Salehabad, Urucuri, Frijoles, and Caimito or with a MA-111 cell antigen of Cacao. [2]
Aguacate antigen showed a slight cross-reaction with Chagres and Nique antisera in CF test as follows:

	Antigen		
Antiserum	**Aguacate**	**Chagres**	**Nique**
Aguacate	> 512/128	0	0
Chagres	8/8	256/128	0
Nique	16/16	0	>2048/512

Cross-neutralization tests (plaque method) using Aguacate virus and immune serum (homologous titer = 512) were done against each of the following viruses and specific immune sera with negative results: ALE, ANH, AMT, BUE, BUJ, CAC, CAI, CDU, CHG, CHV, CHI, FRI, GF, GOR, TEH, ICO, TOS, ITA, ITP, KAR, SFN, SFS, NIQ, PAC, PT, RVF, RG, SAF, SAL, TRA, and URU [2] .

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)	HB 5	5	4+		5	1-2mm	5.5 *	

* 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 trapidoi (males)	4/9,906		Panama (1)
Lutzomyia trapidoi (females)	11/63,985		
Lutzomyia ylephilatrix (females)	3/24,376		
Lutzomyia spp. (males)	3/70,043		
Lutzomyia spp. (females)	10/86,202		
Man		0/140 NT	

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)	Vero 4, VP-175A	ic	Death	5.9	
Mice (nb)		ip			
Mice (nb)		sc			
Mice (wn)		ic			
Mice (wn)		ip			
hamster (nb)	HB 5	ic 0.02	Death	6.9	8.7
hamster (wn)		ip 0.1	Antibody and survival		

Section IX - Experimental Arthropod Infection and Transmission

Aguacate virus did not multiply or survive in Aedes albopictus or Culex quinquefasciatus following inoculation (3).

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. 1975. J. Med. Ent. 12:1-4.

Remarks