Virus Name: Santa Rosa	Abbreviation: SARV

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
Bunyamwera

SECTION I - Full Virus Name and Prototype Number

Prototype Strain Number / Designation
M2-1493

Accession Number

Original Date Submitted
9/27/1984

Family
Bunyaviridae

Genus
Bunyavirus

Information From
Arbovirus Reference Branch, CDC

Address
DVBVD, CDC, Post Office Box 2087, Fort Collins, Colorado 80522,USA

Information Footnote
Reviewed by editor

Section II - Original Source

Isolated By (name)
W.D. Sudia and V.F. Newhouse

Isolated at Institute
CDC, Atlanta, Georgia

Host Genus
Aedes angustivittatus, pool of 100 mosquitoes

Species

Host Age/Stage
Adults

Sex
Female

Isolated From

Isolation Details

Signs and Symptoms of Illness

Arthropod
Depleted

Time Held Alive before Inoculation
Frozen on dry ice in field

Collection Method
CDC light trap

Collection Date
6/20/1972

Place Collected (Minimum of City, State, Country)
Durango (Santa Rosa), Mexico

Latitude
24° 1' N

Longitude
10° 32' W

Macrohabitat
Sonoran Desert

Microhabitat
Valley floor, cactus and mesquite

Method of Storage until Inoculated
Dry ice (-60dC) in field, mechanical freezer (-70dC) in laboratory

Footnotes

Section III - Method of Isolation

Inoculation Date
7/21/1972

Animal (Details will be in Section 6)
nb mice

Route Inoculated
Intracerebral

Reisolation
Yes

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) **1:500**	After Treatment Titer **6.3 dex**	Control Titer **8.8 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)
No	**SMB ext. by sucrose-acetone**	**Goose**
pH Range **5.9-6.9**	pH Optimum	
Temperature Range **4dC, 22dC, 37dC**	Temperature Optimum	

Remarks

Serologic Methods Recommended
NT, CF

Footnotes

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

Shown to be a member of the Bunyamwera group by CF tests. Neutralization tests differentiated Santa Rosa virus from other known Bunyamwera group viruses. Neutralization test results shown below:

Virus or Antibody to:	M2-1493 Ht/Ho [a]	
	Virus	Antibody
Maguari	20/430	320/1100
(MPB1-1551) [b]	- [d]/230	160/1100
Ilesha	40/5120	160/1100
Lokern	320/2560	80/1100
Cache Valley	20/80	55/1100
Tlacotalpan	20/320	40/1100
Birao	110/10240	40/1100
Shokwe	-/810	20/1100
Batai	460/5100	-/1100
Beliefe [c]	40/2560	-/1100
Tensaw	20/1110	-/1100

Bunyamwera	20/1800	-/1100
Northway	-/490	-/1100
Main Drain	-/2560	-/1100
Guaroa	-/230	-/1100
Kairi	-/320	-/1100
Anhembi	-/1000	-/1100
Sororoca	-/7200	-/1100
Wyeomyia	-/1000	-/1100
Tucunduba [c]	-/260	-/1100
Taiassui [c]	-/320	-/1100
Germiston	-/2560	-/1100

[a] Geometric mean titer of 2 or more determinations or 2 or more observations of titers = <20.

[b] A variant of Cache Valley virus, Strain MPB1-1551 was isolated from Psorophora confinnis mosquitoes collected 7/17/71 in Palo Blanco, Tamaulipas, Mexico (1).

[c] This virus designation has not been formally published. Mention here is not intended to constitute priority.

[d] - = <20; no antibody detected at lowest dilution tested (1:20).

Section VI - Biologic Characteristics

Virus Source (all VERTEBRATE isolates)

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)	SM5				2	2-3 mm	9.5(d)		
Primary duck embryo (PC)						No plaques			

(d) 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
Aedes angustivittatus	2/26,318		Durango(Santa Rosa), Mexico
Ae vexans	0/13,467		
Anopheles pseudopunctipennis	0/3		
Culex tarsalis	0/2,113		
Other mosquitoes	0/2,631		

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)	SM5	ic	Death	3	9.8
Mice (nb)		ip	Death	5	8.4
Mice (nb)		sc			
Mice (wn)		ic	Death	6	9.1
Mice (wn)		ip	None		<3.5

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)

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)
Durango (Santa Rosa), Mexico (5)

Suspected (Antibody only detected)

Section XIII - References

1. Sudia, W.D., et al. 1975. Am. J. Epidem. 101:17-35.
2. Woodall, J.P., et al. 1965. E. Afr. Virus Res. Inst. Report No. 14. p. 37.
3. Henderson, B.E., et al. 1969. E. Afr. Virus Res. Inst. Report No. 18.p. 29.
4. Woodall, J.P. 1967. Atas do Simposio sobre a Biota Amazonica 6:31-63.
5. Sudia, W.D., et al. 1975. Am. J. Epidem. 101:51-58.

Remarks