

Virus Name: Sal Vieja		Abbreviation: SVV
Status Possible Arbovirus	Select Agent No	SALS Level 3
SALS Basis Placed at this biosafety level based on close antigenic or genetic relationship to other viruses in a group of 3 or more viruses, all of which are classified at this level.		
Other Information		
Antigenic Group B		

SECTION I - Full Virus Name and Prototype Number

Prototype Strain Number / Designation 78TWM-106	Accession Number	Original Date Submitted 8/31/1984
Family Flaviviridae	Genus Flavivirus	
Information From Robert G. McLean	Address Vector-Borne Diseases Division, CDC, P.O. Box 2087, Fort Collins, CO 80522	
Information Footnote Reviewed by editor		

Section II - Original Source

Isolated By (name) R.G. McLean	Isolated at Institute CDC, Fort Collins, Colorado	
Host Genus Peromyscus leucopus (rodent)	Species	Host Age/Stage Adult
Sex Female		
<u>Isolated From</u> Serum/Plasma	<u>Isolation Details</u>	
Signs and Symptoms of Illness None	Arthropod	
Time Held Alive before Inoculation		
Collection Method Sherman live trap	Collection Date 8/28/1978	
Place Collected (Minimum of City, State, Country) Sal Vieja oilfield, 2 mi. NE of La Sara, Texas		
Latitude 26° 30' N	Longitude 97° 54' W	
Macrohabitat Cultivated farm in mesquite brushland of semi-arid Tamaulipan brush-thorn association	Microhabitat Mesquite and grass hedgerow between milo and sugarcane fields	Method of Storage until Inoculated -60dC (dry ice)
Footnotes		

Section III - Method of Isolation

Inoculation Date

9/5/1978

Animal (Details will be in Section 6)

nb mice

Route Inoculated

Intracranial

Reisolation

Not tried

Other Reasons

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

4.2 dex

Control Titer

6.8 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

HemagglutinationHemagglutination
YesAntigen Source
SMB ext. by sucrose-acetoneErythrocytes (species used)
GoosepH Range
5.75-7.0pH Optimum
6.1Temperature Range
4dC and RTTemperature Optimum
Room temperature

Remarks

Serologic Methods Recommended
HI, CF, NT

Footnotes

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

In CF and HI tests, with crude alkaline extract of infected SM brain as antigen, 78TWM-106 reacted only with a flavivirus grouping MIAF. No reactions were observed when 78TWM-106 antigen was tested with 47 other immune mouse ascitic fluids representing more than 250 arboviruses plus rabies, mouse hepatitis and Theiler's GDVII viruses. Sal Vieja virus (78TWM-106) was found to be most closely related to Modoc, Jutiapa, Cowbone Ridge, Rio Bravo, and Apoi flaviviruses.

Antigen or antibody to:	Sal Vieja antigen		Sal Vieja antibody	
	CF ^a	NT ^b	CF	NT
Sal Vieja	2048	5120	2048	5120
71V1251 ^c	128	40	256	40
Modoc	363	316	64	457
Saboya	16	^d	8	
Aroa	16		<8	<40
Cowbone Ridge	16	80	128	80
Jutiapa	16	40	<8	320
Entebbe bat	16		<8	
Mont. Myot. leukoenc.	8		<8	
Rio Bravo	8	<40	16	<40

Apoi	<8	<40	64	<40
Sokuluk	<8	<40	16	<40
St. Louis enc.	<8	<40	8	<40
Dakar bat	<8		8	
Bukalasa bat	<8		8	
Negishi	<8		8	

^a Also tested by CF with Sal Vieja antigen and MIAF for: Israel turkey meningoencephalitis, Batu Cave, Phnom Penh bat, Carey Island, Koutango, and Tamana bat viruses as well as Sal Vieja MIAF and antigens for: Israel Turkey meningoencephalitis, Batu Cave, Phnom Penh bat, Carey Island, Koutango, and Tamana bat viruses - all <8.

^b Also tested by serum dilution plaque-reduction neutralization with Sal Vieja virus and MIAF for: Phnom Penh bat virus as well as Sal Vieja MIAF and Phnom Penh bat virus - all <40.

^c 71V1251 is a flavivirus from south Texas for which the name San Perlita virus has been proposed.

^d Blank = not tested.

Section VI - Biologic Characteristics

Virus Source (all VERTEBRATE isolates)		Lab Methods of Virus Recovery (ALL ISOLATIONS)								
Blood (LV)		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)			
LLC-MK2 (CL)	SM4				9	2-3 mm	6.9*			
Vero (CL)							<3.0			
Duck embryo (PC)								<3.0		
* Expressed in dex										

Vertebrate (species and organ) and arthropod	No. isolations/No. tested	No. with antibody/No. tested Test used	Country and region
Peromyscus leucopus	1/62		South Texas, USA
11 other rodent species	0/222		
Nycticerus humeralis	0/17		
Didelphis marsupialis	0/8		
4 other species of mammals	0/5		
51 species of birds	0/653		
5 species of reptiles	0/34		
Aedes mosquitoes (6 species)	0/606 pools (38,248)		
Anopheles mosquitoes (4 species)	0/43 (129)		
Culex mosquitoes (5 species)	0/210 (6,110)		
Psorophora mosquitoes (5 species)	0/481 (32,919)		
Uranotaenia lowii	0/7 (61)		

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)	Original	ic	Death	14		
Mice (nb)		ip				
Mice (nb)		sc				
Mice (wn)		ic				
Mice (wn)	SM4	ip	None			
Mice (nb)	SM1	ic	Death	7		
Mice (nb)	SM4	ic	Death	8	8.8	

Section IX - Experimental Arthropod Infection and Transmission

Arthropod species & virus source(a)	Method of Infection log10/ml (b)		Incubation period (c)		Transmission 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 BodiesIntranuclear

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)

Southeast Texas, USA

Suspected (Antibody only detected)

Section XIII - References

1. Wesley, I.V. and Calisher, C.H. 1982. Am. J. Trop. Med. Hyg. 31:1273-1284.

Remarks