

Virus Name: Tamiami		Abbreviation: TAMV
Status Not Arbovirus	Select Agent No	SALS Level 2
SALS Basis Level 2 arenaviruses are not known to cause serious acute disease in man and are not acutely pathogenic for laboratory animals, including primates. Survey experience is sufficient to conclude that laboratory aerosol infection does not occur in the course of routine work with cell cultures and animals not subject to chronic infection. In view of reported high frequency of laboratory aerosol infection that occurred in workers manipulating high concentrations of Pichinde virus, it is strongly recommended that work with high concentrations of Level 2 arenaviruses be done at Level 3.		
Other Information		
Antigenic Group Tacaribe		

SECTION I - Full Virus Name and Prototype Number

Prototype Strain Number / Designation W 10777	Accession Number	Original Date Submitted 11/7/1984
Family Arenaviridae	Genus Arenavirus	
Information From Arbovirology Unit	Address Center for Disease Control, Atlanta, Georgia 30333, USA	
Information Footnote Reviewed by editor		

Section II - Original Source

Isolated By (name) John Davie	Isolated at Institute CDC, Atlanta, Georgia	
Host Genus Sigmodon hispidus (cotton rat)	Species	Host Age/Stage Adult
Sex Male		
<u>Isolated From</u>	<u>Isolation Details</u>	
Organs/Tissues	Heart	
Signs and Symptoms of Illness None	Arthropod	
Time Held Alive before Inoculation		
Collection Method Box trap	Collection Date 1/5/1965	
Place Collected (Minimum of City, State, Country) Cowbone, Hendry County, Florida, USA		
Latitude 26° 17' N	Longitude 81° 5' W	
Macrohabitat Elevation <25 feet; slash pine, palmetto, shrubs, grasses	Microhabitat Open sandy grassland, planted to slash pine; limestone outcrops	Method of Storage until Inoculated Mechanical freezer at - 60dC
Footnotes		

Section III - Method of Isolation

Inoculation Date

3/3/1965

Animal (Details will be in Section 6)

nb mice

Route Inoculated

Intracerebral

Reisolation

Yes

Other Reasons

No others of group ever in this lab. Also, 28 isolations in ERC Lab., Florida (1,4)

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)
1:200

After Treatment Titer
<1.5 dex

Control Titer
5.5 dex

Other (formalin, radiation)
Labile at 56C/30 min

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
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Inclusion Bodies	Other
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Hemagglutination

Hemagglutination	Antigen Source	Erythrocytes (species used)
No	SMB ext. by sucrose-acetone crude preps	Goose*

pH Range 5.9-7.2	pH Optimum
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Temperature Range 4dC - 37dC	Temperature Optimum
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Remarks

* Others tested including human "O", guinea pig, sheep, mouse and green monkey

Serologic Methods Recommended

CF, NT, precipitin-in-gel

Footnotes

* Others tested including human "O", guinea pig, sheep, mouse and green monkey

No relationship by CF with the following viruses (W 10777 antigen): SLE, MVE, Cowbone Ridge, Modoc, Rio Bravo, dengue 1, dengue 3, MML, Cache Valley, Tensaw, Silverwater, Turlock, Mermet (AV-782), Oropouche, Highlands J, CE (BFS-283), trivittatus, La Crosse, VSI, VSNJ, Hart Park, Flanders, Mahogany Hammock; Broad: A, B, C, Bunyamwera, Guama, Shark River-Pahayokee, and Capim. Also mouse hepatitis, mouse adenovirus, reovirus 3, Theiler's (TO), and LCM.

Antibody or Viruses/antigens	Tamiami Antigen		Tamiami HIAF	
	CF ^a	Plaque NT ^b	CF	Plaque NT
W 10777	128/>128	16	128/>128	16
Pichinde	64/>64		4/4	
Amapari	32/>128	<4/512	8/8	<4/16
Tacaribe	8/32	<4/1024	<4/4	<4/16
Junin	8/128	<4/128	<4/<4	<4/16
Machupo	32/128	<4/256	<4/<4	<4/16
Parana	8/128		<4/<4	
CF tests conducted by Dr. J. Casals; plaque NT tests conducted by Dr. P.A. Webb.				
^a Serum titer/antigen titer				
^b Fixed virus dilutions; varying ascitic fluid dilutions; heterologous/homologous				

Section VI - Biologic Characteristics

Virus Source (all VERTEBRATE isolates)

Blood (M) (LV), cerebro spinal fluid (M), CNS (LV), liver (LV), spleen (LV)

Lab Methods of Virus Recovery (ALL ISOLATIONS)

Newborn and weanling 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)			
Duck embryo (PC)	W 10777		No CPE								
HEp 2 (CL)	SM 6		No CPE								
BHK-21 (CL)			No CPE								
"L" cells (CL)			No CPE								
Green monkey kidney (CL)					12	Faint, <1 mm					
Vero (CL)					9	Pinpoint, indistinct	5.7**				
Vero (CL)	W 11075 SM 11				9	<1 mm	6.9				
LLC-MK2 (CL)	W 10777 SM 6				8	Plaques	>4.0				
** Expressed in dex											

Vertebrate (species and organ) and arthropod	No. isolations/No. tested	No. with antibody/No. tested Test used	Country and region
Miccosukee Indians		0/98 PRNT	Everglades, S. Florida (3)
Seminole Indians		5/131 PRNT	Big Cypress Reservation, Everglades, Florida (3)
Sigmodon hispidus	9/294		Everglades, S. Florida (2)
S. hispidus	28/912		Tampa Bay Area, Florida (1, 4)
S. hispidus, sentinel	1/356		
Oryzomys palustris (rice rat)	1/149		
Mosquitoes	0/>2x106		Everglades, S. Florida (2)

Experimental host and age	Passage history and strain	Inoculation Route-Dose	Evidence of infection	AST (days)	Titer log ₁₀ /ml
Mice (nb)	SM 3	ic 0.02	Death	15	5.0
Mice (nb)		ip 0.02	None		<3.0
Mice (nb)		sc			
Mice (wn)		ic 0.03	Death	19-20	3.3
Mice (wn)		ip 0.03	None		<3.0
Mice (nb)		im 0.02	Death	16	3.0
Mice (wn)		im 0.03	None		<3.0
Mice (nb)	SM 6	ic 0.02	Death	16	4.7
Mice (nb)	SM 8	ic 0.02	Death	9-10	9.0
cotton rats (4-9 day)	SM 6	ic 0.02	Antibody		7.0*
cotton rats (3-4 wk)		ic 0.03	Antibody		6.8*
white rats (2-4 day)		ic,sc	Sporadic deaths and antibody		7.5*
hamsters (3-4 wk)		ic,ip,sc	Antibody		8.0*
guinea pigs (200-350gm)		ip,sc	Antibody		>2.0*

* Infective dose₅₀ determined by assay of antibody production.

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)

Swiss mice: encephalomyelitis; degeneration of isolated neurons, increase in mononuclear cells throughout the brain, infiltrating the meninges to a minor degree and surrounding the blood vessels. Scattered foci of necrosis.

Inclusion Bodies

Intranuclear

Lower Vertebrates

Organs/Tissues Affected

Brain (LV), spinal cord (LV)

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)

Florida, USA

Suspected (Antibody only detected)

Section XIII - References

1. Jennings, W., et al. 1970. Am. J. Trop. Med. and Hyg. 19:527-536.
2. Calisher, C.H., et al. 1970. Am. J. Trop. Med. and Hyg. 19:520-526.
3. Nuckolls, J. Unpublished data.
4. Wellings, F.M., et al. 1972. Am. J. Trop. Med. and Hyg. 21:201-213.

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