

<b>Virus Name: Tensaw</b>		<b>Abbreviation: TENV</b>
Status <b>Arbovirus</b>	Select Agent <b>No</b>	SALS Level <b>2</b>
SALS Basis <b>Results of SALS surveys and information from the Catalogue.</b>		
Other Information		
Antigenic Group <b>Bunyamwera</b>		

**SECTION I - Full Virus Name and Prototype Number**

Prototype Strain Number / Designation <b>A9-171b</b>	Accession Number	Original Date Submitted <b>2/18/1985</b>
Family <b>Bunyaviridae</b>	Genus <b>Bunyavirus</b>	
Information From <b>Arbovirology Unit</b>	Address <b>Center for Disease Control, Atlanta, Georgia 30333, USA</b>	
Information Footnote <b>Reviewed by editor</b>		

**Section II - Original Source**

Isolated By (name) <b>Chamberlain and Sudia(3)</b>	Isolated at Institute <b>Virus Vector Laboratory, CDC, Atlanta</b>	
Host Genus <b>Anopheles crucians (pool of 60)</b>	Species	Host Age/Stage <b>Adult</b>
Sex <b>Female</b>		
<u>Isolated From</u>	<u>Isolation Details</u>	
Signs and Symptoms of Illness	Arthropod <b>Depleted</b>	
Time Held Alive before Inoculation		
Collection Method <b>Battery-operated light trap</b>	Collection Date <b>9/28/1968</b>	
Place Collected (Minimum of City, State, Country) <b>Steam Mill Landing, Baldwin Cty., AL, USA</b>		
Latitude <b>31° N</b>	Longitude <b>88° W</b>	
Macrohabitat <b>Between Bay Minette and Mobile, near Tensaw River; margin of swamp (beech, magnolia, sweetgum habitat)</b>	Microhabitat	Method of Storage until Inoculated <b>Revco freezer at -60dC</b>
Footnotes		

**Section III - Method of Isolation**

Inoculation Date  
**1/23/1961**

Animal (Details will be in Section 6)  
**nb mice**

Route Inoculated <b>Intracerebral</b>	Reisolation <b>Yes</b>
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Other Reasons  
**Naturally occurring antibodies in 14 of 150 human residents of the area**

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) <b>After exposure</b>	After Treatment Titer <b>3.73 dex</b>	Control Titer <b>7.44 dex</b>

Other (formalin, radiation)  
**Inactivated at 15 min. at 56C. Stable 2 hours at 37C and overnight at 4dC**

**Virion Morphology**

Shape <b>Spherical particles</b>	Dimensions <b>98 nm</b>	
Mean nm	Range nm	
Measurement Method <b>Electron microscopy (5)</b>	Surface Projections/Envelope <b>Closely adherent irregular envelope</b>	Nucleocapsid Dimensions, Symmetry

**Morphogenesis**

Site of Constituent Formation in Cell

Site of Virion Assembly

Site of Virion Accumulation

Inclusion Bodies

Other

**Hemagglutination**

Hemagglutination

Antigen Source

Erythrocytes (species used)

**Yes****SMB ext. by sucrose-acetone****Goose**

pH Range

pH Optimum

**6.0-6.4****6.2**

Temperature Range

Temperature Optimum

**4dC, 24dC, 37dC****37dC**

Remarks

**\* HA produced with difficulty after 15 suckling mouse passages.**

Serologic Methods Recommended

**HI, CF, NT**

Footnotes

**\* HA produced with difficulty after 15 suckling mouse passages.**

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

Virus	Serum of Unidentified Virus			Serum	Antigen of Unidentified Virus		
	NT	CF	HI		NT	CF	HI
	Ht/Ho	Ht/Ho	Ht/Ho		Ht/Ho	Ht/Ho	Ht/Ho
SLE	0.12/2.77	0/32	0/320	SLE	0.00/3.75	0/16	0/640
EEE	0.00/2.77	0/32	0/320	EEE	0.00/3.19	0/128	0/> 1280
WEE	0.00/2.17	0/32	0/320	WEE	0.00/4.30	0/128	0/640
California	0.08/2.77	0/32	0/160	California	0.10/2.00+	0/32	0/80
Bunyamwera	0.50/2.77	8/128	20/320	Bunyamwera	0.40/4.25	16/128	10/320
Chittoor G-20217	2.00/2.77	128/128	40/320	Chittoor G-20217	1.90/3.00+	256/256	40/320
Cache Valley Utah 6V-633	2.73/2.67	128/128		Cache Valley Utah 6V-633	2.23/3.52	256/256	20/
Maguari Belem 7272	2.25/2.67	32/32	40/320	Maguari Belem 7272	2.31/3.36	512/256	40/80
Wyeomyia	1.02/	8/		Wyeomyia	0.00/	4/	
Guaroa		32/128	0/320	Guaroa		16/256	0/640

NT: LNI given in dex.

SIRACA has antigenically classified Tensaw virus as a distinct virus type and placed it in the Bunyamwera complex, one of four complexes comprising the BUN serogroup.

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 +/- (g)
		Day (c)	Extent (d)	Titer TCD50/ml (e)	Day (c)	Size (f)	Titer PFU/ml (e)	
Hamster kidney (PC)	MB 2	2-4	CPE	7.0**				
Monkey kidney (PC)			No CPE					
HeLa (CL)		2-4	CPE	4.7				
Monkey kidney (PC)					2-4	Plaques	6.4**	
HeLa (CL)					2-4	Plaques	5.3	
Duck embryo (PC)					2-4	Plaques	7.2	

\*\* Expressed in dex

Vertebrate (species and organ) and arthropod	No. isolations/No. tested	No. with antibody/No. tested Test used	Country and region
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S. Alabama, 1960-63 (3): Anopheles crucians, 16/21,929; Mansonia perturbans, 1/17,327			
Ware Co., Georgia, 1963 (3): An crucians, 18/12,950; An quadrimaculatus, 1/92; Aedes atlanticus, 2/13,059; Ae mitchellae, 3/1,249; Psorophora confinnis, 16/3,165.			
Tampa Bay area, Florida, 1960, 1962 (3): An. crucians, 30/6,737.			
Tampa Bay area, Florida, 1963-70 (4): An crucians, 131/128,676; An punctipennis, 6/874; An quadrimaculatus, 3/7,158; Ae atlanticus, 6/34,962; Ae infirmatus, 17/105,865; Ae taeniorhynchus, 3/34,127; Culex nigripalpus, 2/687,508; Cx salinarius, 1/147,807; Ma perturbans, 1/26,267; Ps confinnis, 5/14,399.			
Big Cypress Reservation, S. FL, 1961 (3): An crucians, 52/22,356; An quadrimaculatus, 1/2,310; Ps confinnis, 15/71,895; Cx nigripalpus, 1/67,285.			
In addition, virus isolated from 1/14 dogs (3), 1/356 cotton rats and 2/144 marsh rabbits (4).			
HI antibodies. Big Cypress, Fla.: Man, 14/65; dog, 10/14; cow, 1/16; chickens, 0/97. Tampa Bay area, FL: Man, 1/58. S. Alabama: Man, 14/150; wild birds, 0/74. Georgia and Florida: Raccoon, 3/18.			

Experimental host and age	Passage history and strain	Inoculation Route-Dose	Evidence of infection	AST (days)	Titer log <sub>10</sub> /ml
Mice (nb)	SM 2	ic	Paralysis and death	5-7	7.1
Mice (nb)	SM 18	ip	Paralysis and death	3-4	9.1
Mice (nb)		sc			
Mice (wn)	SM 2	ic	Paralysis and death	6-10	3.0
Mice (wn)	SM 18	ip	Antibody		
™ (nb)		ic	Paralysis and death	3-4	9.0
™ (nb)		sc	Paralysis and death	3-4	9.0
dogs (3-5 mo)	SM 2	sc 10 <sup>3</sup> SMLD50	Viremia, antibody		7.4
raccoons (ad)		sc 10 <sup>3</sup> SMLD50	Viremia, antibody		2.8
rhesus monkey(5 lb)		sc 10 <sup>3</sup> SMLD50	Viremia, antibody		2.8
lab rabbits (1-2 mo)		sc 10 <sup>3</sup> SMLD50	Viremia, antibody		6.8
cotton tail rabbit (yg ad)		sc 10 <sup>3</sup> SMLD50	Viremia, antibody		5.5
cotton rats (yg ad)		sc 10 <sup>3</sup> SMLD50	Viremia, antibody		6.2
hamster (3 wk)		sc 10 <sup>3</sup> SMLD50	Viremia, antibody		5.9

Guinea pigs, gray squirrels, eastern chipmunks, opossums, baby chicks all negative for viremia. HI antibody occurrence in these experimental hosts irregular, inconsistent.



**Section XIII - References**

1. Coleman, P.H. 1969. Am. J. Trop. Med. Hyg. 18:81-91.
2. Sudia, W.D., et al. 1969. Am. J. Trop. Med. Hyg. 18:98-102.
3. Chamberlain, R.W., et al. 1969. Am. J. Trop. Med. Hyg. 18:92-97.
4. Wellings, F.M., et al. 1972. Am. J. Trop. Med. Hyg. 21:201-213.
5. Murphy, F.A., et al. 1968. J. Virol. 2:1315-1325.
6. McGowan, J.E., et al. 1973. Am. J. Epidem. 97:199-207.
7. Calisher, C.H., et al. 1985. Intervirology. To be submitted.

**Remarks**