

Virus Name: Jamestown Canyon		Abbreviation: JCV
Status Arbovirus	Select Agent No	SALS Level 2
SALS Basis Results of SALS surveys and information from the Catalogue.		
Other Information		
Antigenic Group California		

SECTION I - Full Virus Name and Prototype Number

Prototype Strain Number / Designation 61V-2235	Accession Number	Original Date Submitted 12/12/1984
Family Bunyaviridae	Genus Bunyavirus	
Information From Louis C. LaMotte, Jr.	Address CDC, Atlanta, Georgia 30333, USA	
Information Footnote Reviewed by editor		

Section II - Original Source

Isolated By (name) L.C. LaMotte, G.T. Crane, G.J. Love	Isolated at Institute CDC, Atlanta, Georgia	
Host Genus Culiseta inornata (pool of 6)	Species	Host Age/Stage Adult
Sex Male		
<u>Isolated From</u>	<u>Isolation Details</u>	
Signs and Symptoms of Illness	Arthropod	
Time Held Alive before Inoculation		
Collection Method New Jersey light trap	Collection Date 7/1/1961	
Place Collected (Minimum of City, State, Country) Jamestown Canyon (6 m. NNW Boulder, CO)		
Latitude 40° 6' N	Longitude 105° 21' W	
Macrohabitat Steep-sided mountain canyon	Microhabitat	Method of Storage until Inoculated At -70dC in Revco
Footnotes		

Section III - Method of Isolation

Inoculation Date
6/2/1962

Animal (Details will be in Section 6)
2 wk mice

Route Inoculated Intracerebral	Reisolation Yes
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Other Reasons
Up to this time, we had no California encephalitis group virus in our laboratory.

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)	After Treatment Titer	Control Titer
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

Hemagglutination Antigen Source Erythrocytes (species used)
No **SMB ext. by sucrose-acetone (1)** **Goose (1)**

pH Range pH Optimum
5.8-7.0

Temperature Range Temperature Optimum
RT

Remarks
HA obtained by PEG concentration of BHK-21 cell culture fluid(15).

Serologic Methods Recommended
CF, NT

Footnotes
HA obtained by PEG concentration of BHK-21 cell culture fluid(15).

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

Related to California encephalitis virus, but considered to be antigenically distinct by CF test [2].

Dr. Leo Thomas [3] tested 61V-2235 (Jamestown Canyon) in a neutralization test with following results:

Sera	Viruses			
	61V-2235		CE	
	Titer	LNI	Titer	LNI
61V-2235	3.4	3.0	<1.8	>2.2
CE	3.3	3.1	<1.5	>2.5
NRS	6.4		4.0	

NRS: Normal rabbit sera

Titers, LNI expressed in dex.

Very close antigenically to Jerry Slough virus by agar gel diffusion [5].

SIRACA considers Jamestown Canyon virus to be a subtype of Melao virus, and the unregistered South River virus to be a variety of Jamestown Canyon virus. In addition, Jerry Slough virus is considered to be a strain of Jamestown Canyon virus [19].

Section VI - Biologic Characteristics

Virus Source (all VERTEBRATE isolates)
Blood (LV)

Lab Methods of Virus Recovery (ALL ISOLATIONS)
Weanling mice (2 weeks)

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)		4	CPE					
BHK-21 (CL)		2-3	4+					
Vero (CL)		3-4	4+					
Vero (CL)	SM 1				6	2 mm	5.4* (16)	
LLC-MK2 (CL)					3	1-3 mm	5.5 (16)	

* Expressed in dex

Vertebrate (species and organ) and arthropod	No. isolations/No. tested	No. with antibody/No. tested Test used	Country and region
Aedes spp. pools	3/215		Canada (11)
Culiseta inornata	1/226		Colorado, USA
Aedes communis	1		Wisconsin, USA(4)
Aedes stimulans	2		
Hybomitra lasiophthalma(horsefly)	1		
Chrysops cincticornis (deerfly)	1		
Sentinel white-tailed deer(blood)	1/3	2/3 NT	Wisconsin (8)
White-tailed deer		99/187 NT	Texas, USA (9)
White-tailed deer		327/587 NT	Wisconsin (6)
Moose		6/1,289 NT	Nova Scotia, Canada, 1977-1978 (12)
Moose		4/127 NT	New Brunswick, Canada (13)
Aedes abserratus	3		Connecticut, USA; 1966-1975 (11)
Ae vexans	1		
Ae cantator	1		
Ae triseriatus (eggs)		Ohio, USA (20)	
Humans		216/780 NT	Michigan, USA (21)
Elk (Cervus elaphus)		27/50NT	No. Michigan, USA(22)
Moose (Alces alces)		22/31NT	Ontario, Canada (22)
Moose (Alces alces)		13/20NT	No. Michigan, USA(22)

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 log ₁₀ /ml	
Mice (nb)	Mosq. susp.	ic 0.02	Killed 13/13 on days 4-5			
Mice (nb)		ip 0.02	Killed 8/8			
Mice (nb)		sc				
Mice (wn)		ic				
Mice (wn)		ip				
Mice (2 wk)	Mosq. susp.	ic 0.03	Killed 5/5 on days 6-8			
guinea pig (250 gm)		ic	Killed 2/2			
white-tailed deer	SMB 6	sc	Viremia 8/9 (7)			

Section IX - Experimental Arthropod Infection and Transmission

Arthropod species & virus source(a)	Method of Infection log ₁₀ /ml (b)		Incubation period (c)		Transmission by bite (d)		Assay of arthropod, log ₁₀ /ml (e)		
	Feeding	Injected	Days	°C	Host	Ratio	Whole	Organ	System
C. tarsalis females	Intrathoracically inoculated; 10 to 100-fold titer increase in 7 days at 80°F.								

Section X - Histopathology

Character of lesions (specify host)

Inclusion Bodies

Intranuclear

Organs/Tissues Affected

Category of tropism

Section XI - Human Disease

In Nature
Reported

Residual

Death

Subclinical

Overt Disease

Clinical Manifestations

CNS signs (including encephalitis) (14), meningitis (17,18)

Number of Cases
1 (14); few (17,18)

Category (i.e. febrile illness, etc.)
CNS involvement

Section XII - Geographic Distribution

Known (Virus detected)
USA, Canada (10)

Suspected (Antibody only detected)

Section XIII - References

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