

Virus Name: Saumarez Reef		Abbreviation: SREV
Status Possible Arbovirus	Select Agent No	SALS Level 3
SALS Basis Insufficient experience with virus; i.e., experience factor from SALS surveys was less than 500 in laboratory facilities with low biocontainment.		
Other Information		
Antigenic Group B		

SECTION I - Full Virus Name and Prototype Number

Prototype Strain Number / Designation CSIRO4	Accession Number	Original Date Submitted 8/14/1984
Family Flaviviridae	Genus Flavivirus	
Information From T.D. St. George	Address CSIRO, Long Pocket Laboratories, Private Bag 3, Indooroopilly, Queensland 4068 Australia	
Information Footnote Reviewed by editor		

Section II - Original Source

Isolated By (name) CSIRO	Isolated at Institute Brisbane, Australia	
Host Genus Ornithodoros capensis (Neumann 1901)	Species	Host Age/Stage Adult
Sex Female		
<u>Isolated From</u>	<u>Isolation Details</u>	
Signs and Symptoms of Illness	Arthropod Gravid	
Time Held Alive before Inoculation 28 days at 4C		
Collection Method UNKNOWN	Collection Date 8/26/1974	
Place Collected (Minimum of City, State, Country) Saumarez Reef, Queensland		
Latitude 22° 0' S	Longitude 153° 30' E	
Macrohabitat Coral sand cay	Microhabitat Nest of sooty tern (<i>Sterna fuscata</i>)	Method of Storage until Inoculated 4dC
Footnotes		

Section III - Method of Isolation

Inoculation Date
9/23/1974

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)	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 Yes	Antigen Source SMB ext. by sucrose-acetone	Erythrocytes (species used) Gander
pH Range 6.3-7.3	pH Optimum 6.6	
Temperature Range	Temperature Optimum 37dC only used	
Remarks		
Serologic Methods Recommended CF, HI, NT		
Footnotes		

Appears to be identical with the following isolates from Australia: CSIRO 5 from *Ornithodoros capensis*, Queensland; CSIRO 14 from *Ixodes eudyptidis* Tasmania; CSIRO 3 from *Ixodes eudyptidis*, Tasmania.

Complement-fixation tests using a mouse ascitic fluid prepared against Saumarez Reef virus in dilutions from 1:8 and 50 flavivirus antigens and Saumarez Reef virus in dilutions of 1:8 and 1:32.

Reciprocal of Virus Titre	Antigens
256	Saumarez Reef
64	Tyuleniy
32	Karshi, Koutango, Louping III, Negishi, Russian spring summer encephalitis, Sokoluk, Uganda S., Usutu, yellow fever
16	Alfuy, Apoi, Banzi, Central European tick-borne encephalitis, dengue 2, Edge Hill, Ilheus, Murray Valley encephalitis, Omsk hemorrhagic fever, Saboya, St. Louis encephalitis, Spondweni, Wesselsbron, West Nile, Zika
8	Dengue 4, Entebbe bat, Israel turkey meningoencephalitis, Kadam, Kunjin, Kyasanur Forest disease, Langat, Ntaya
8	Bouboui, Bussuquara, Cowbone Ridge, Dakar bat, dengue 1, dengue 3, Japanese encephalitis, Jutiapa, Kokobera, Modoc, Montana Myotis leukoencephalitis, Phnom-Penh bat, Powassan, Royal Farm, Stratford, Tembusu, Rio Bravo

Comparison of Saumarez Reef Virus and Tyuleniy Virus by Mouse NT

1:3 Serum or Mouse Ascitic Fluid	Virus in dilutions			
	Saumarez Reef		Tyuleniy	
	LD50	LNI(dex)	LD50	LNI(dex)
Saumarez Reef	4.0	3.5	6.0	1.5
Tyuleniy	2.7	4.8	1.5	6.0
Control	7.5		7.5	

Prior studies had shown that the hemmagglutinin of SRE was not inhibited by antisera to the following viruses: SIN, RR, GET, KOO, WON, Leanyer (NT 16701). Likewise, antisera to SRE did not inhibit the hemmagglutinin of the above viruses.

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 +/- (g)
		Day (c)	Extent (d)	Titer TCD50/ml (e)	Day (c)	Size (f)	Titer PFU/ml (e)	
BHK-21 (CL)	SMB 4	3	Total	5.0*				
PS-EK (CL)	SMB 7				7	1-2 mm	9.7* (1)	

* 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
Ixodes eudyptidis	3/16		Tasmania, Australia
Ornithodoros capensis	2/2		Reefs and cays, off shore Queensland, AS
Silver gull (<i>Larus novaehollandiae</i>)		4/16 HI, NT	Tasmania, Australia

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)	SMB 7	ic 0.02	Death	4-8	8.8
Mice (nb)		ip 0.03	Death	5-11	8.0
Mice (nb)		sc			
Mice (wn)		ic 0.02	Death	6-11	8.2
Mice (wn)		ip 0.03	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)

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) Australia (Queensland, Tasmania)
Suspected (Antibody only detected)

Section XIII - References

1. Gorman, B.M., et al. 1975. Aust. J. Med. Technol. 6:65-71. 2. St. George, T.D., et al. 1977. Aust. J. Exp. Biol. Med. Sci. 55:493-499.

Remarks

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