

Virus Name: Tilligerry

Abbreviation: TILV

Status: Possible Arbovirus
SALS Level: 3
Antigenic Group: Eubenangee
Taxonomic status: *Orbivirus*
Other Information: None.

Select Agent:
SALS Basis: IE

HEPA Filtration:

Section I - Full Virus Name and Prototype Number

Full Virus Name: Tilligerry
Prototype Number: NB7080
Information from: I.D. Marshall and G.M. Woodroffe
*
Date: 9/22/1984
Address: Dept. Microbiology, JCSMR, Australian National University, Box 3, Canberra, A.C.T. 2601
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Reviewed by editor

Section II - Original Source

Isolated by: I.D. Marshall, G.M. Woodroffe
at: Canberra
Genus and species: Anopheles annulipes (1,2)
Age/Stage: Adult
Sex: F
Sentinel: X

Isolated From	Isolation detail
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Signs and symptoms of illness:
Arthropod engorged: depleted X gravid
Time held alive before inoculation: Nil
Collection date: 4/22/1971
Method: Light trap and dry ice
Place collected: Nelson Bay, New South Wales, Australia
Latitude: 32° 43' " S
Longitude: 150° 5' " E
Macrohabitat: Consolidated sand dunes, swamps; Port Stephens Peninsula
Microhabitat: Angophera, Banksia, Acacia spp. close to paperbark (Melaleuca) swamp
Method of storage until inoculated: Liquid nitrogen and Revco at -70dC
Footnotes:

Section III - Method of Isolation and Validity

Inoculation Date: 7/27/1971
Animal: nb mice
Embryonated egg:
Tissue Culture:
(Details in Section VI - Biologic Char.)
Route inoculated: ic-sc
Reisolation: Not tried
Other reasons: Antigenically distinct from other viruses in this laboratory
Homologous antibody formation by source animal (See Section II):
Test used: HI CF NT
Other:
Footnotes:

Section IV - Virus Properties

Physicochemical:

RNA: DNA: Single Strand: Double Strand:
Pieces: Infectivity: Sedimentation coefficient(s): /strong>
Percentage wt. of virion protein , lipid carbohydrate
Virion polypeptides:
Number: Details:
Non-virion polypeptides:
Number: Details:
Virion density: Sedimentation coefficient:
Nucleocapsid density Sedimentation coefficient:

Stability of infectivity (effects) pH

Lipid solvent:
(ether) After treatment titer Control titer
(chloroform) After treatment titer Control titer
Detergent:
(deoxycholate) 1:100 After treatment titer 5.2 dex Control titer 6.3 dex
Other (formalin, radiation):

Virion morphology:

Shape Orbivirus-like particles (3) Dimensions 63 + 4 nm
Mean (nm) range (nm) how measured Electron microscopy (3)
Surface projections, envelope Few enveloped particles (100 + 4 nm)
Nucleocapsid dimensions, symmetry See Reference 3

Morphogenesis:

Site of constituent formation in cell
Site of virion assembly Intracytoplasmic fibrillogranular inclusions (2)
Inclusion bodies
Other

Hemagglutination:

Hemagglutination No Antigen source SMB ext. by sucrose-acetone
Erythrocytes Gander pH range 5.75-7.0 pH optimum
Temperature optimum range 37dC
Remarks
Serologic methods recommended CF, NT
Footnotes:

Section V - Antigenic Relationship And Lack of Relationship To Other Viruses

CF tests at JCSMR, QIMR and YARU indicated relationship only with the arboviruses Eubenangee and, more distantly, with Pata. Tilligerry is distinguished from Eubenangee by cross neutralization.

Immune Ascitic Fluid or Antigen	Tilligerry Antigen or Virus			Tilligerry Immune Ascitic Fluid		
	CF		NT	CF		NT
	Ht/Ho	Ratio	Ht/Ho	Ht/Ho	Ratio	Ht/Ho
Eubenangee	512/2048	1/4	0.6/2.0 ^a	128/512	1/4	1.2/2.4
Pata	8/256	1/32	ND	8/64	1/8	ND

^a LNI in dex

Section VI - Biologic Characteristics

Virus source (all VERTEBRATE isolates): Blood (M)(LV) (6-11)

Lab Methods of Virus Recovery (ALL ISOLATIONS): Newborn and weanling mice

Susceptibility of Cell Culture Systems:

Cell system (a)	Virus passage history (b)	Evidence of Infection							Growth Without CPE +/- (g)
		CPE			PLAQUES				
		Day (c)	Extent (d)	Titer TCD50/ml (e)	Day (c)	Size (f)	Titer PFU/ml (e)		
PS (CL)	SMB 4				7	1.5 mm	5.7 (b)		
Vero (CL)					7	2.0 mm	7.0		

(b) Expressed in dex

Section VII - Natural Host Range

Vertebrate (species and organ) and arthropod	No. isolations/No. tested	No. with antibody/No. tested Test used	Country and region
Anopheles annulipes	1/270 (11 pools)		Mid-north coast, New South Wales, Australia (1, 2)

Section VIII - Susceptibility To Experimental Infection (Record Viremia)

Experimental host and age	Passage history and strain	Inoculation Route- Dose	Evidence of infection	AST (days)	Titer log10/ml
Mice (nb)	SMB 4	ic 0.02	Paralysis, death	3	5.7
Mice (nb)		ip 0.03	Antibody, occasional death	5-13	<2.0
Mice (nb)		sc			
Mice (wn)		ic 0.02	Antibody		
Mice (wn)		ip 0.03	Antibody		

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
Aedes aegypti		c. 2.3 / mosquito	0	25			c. 1.3		ic nb mice
4th nb mouse brain			7				1.4-3.5		Range in 3 individually
			14				1.9-2.2		titrated mosquitoes

Section X - Histopathology

Character of lesions:

Inclusion bodies:

Cytoplasmic:(M) (LV) Intranuclear: (M) (LV)

Organs-tissues affected:

Category of tropism:

Section XI - Human Disease

Human disease: In nature: (S) (R)

Death: (S) (R)

Residua: (S) (R)

Laboratory infections: Subclinical: (S) (R)

Overt Disease: (S) (R)

Clinical manifestations:

Category: No. of cases:

Section XII - Geographic Distribution

Known (virus):

Australia

Section XIII - References

1. Gard, G., et al. 1973. Am. J. Trop. Med. Hyg. 22:551-560.
2. Marshall, I.D., et al. 1980. Aust. J. Exp. Biol. Med. Sci. 58:91-102.
3. Schnagl, R.D., and Holmes, I.H. 1975. Aust. J. Biol. Sci. 28:425-432.

Section XIV - Remarks