Virus Name: Eubenangee	Abbreviation: EUBV

Status
Possible Arbovirus

Select Agent
No

SALS Level
2

SALS Basis
Results of SALS surveys and information from the Catalogue.

Other Information

Antigenic Group
Eubenangee

SECTION I - Full Virus Name and Prototype Number

Prototype Strain Number / Designation
IN1074 (4)

Accession Number

Original Date Submitted
10/25/1984

Family
Reoviridae

Genus
Orbivirus

Information From
R.L. Doherty

Address
Queensland Institute of Medical Research, Brisbane

Information Footnote
Reviewed by editor

Section II - Original Source

Isolated By (name)
Doherty and colleagues

Isolated at Institute
Queensland Inst of Medical Research, Brisbane

Host Genus
31 mosquitoes of 11 species

Species

Host Age/Stage
Adult

Sex
Female

Isolated From

Isolation Details

Signs and Symptoms of Illness

Arthropod

Time Held Alive before Inoculation

Collection Method
Light and chicken-baited traps

Collection Date
10/16/1963

Place Collected (Minimum of City, State, Country)
Dinner Creek, near Innisfail, N. Queensland, Australia

Latitude
17° 30' S

Longitude
146° 0' E

Macrohabitat
In mixed mesophyll vine forest between Graham Range and Eubenangee swamp

Microhabitat
Light traps 1.4 meters above ground, chicken traps 0.4-1 meters above ground

Method of Storage until Inoculated
On solid CO2 or in Revco at -57dC

Footnotes

Section III - Method of Isolation

Inoculation Date
10/25/1963

Animal (Details will be in Section 6)
nb mice

Route Inoculated
Intracerebral

Reisolation
Not tried

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)
50% final

After Treatment Titer
(a) 3.5;(b) 4.7 dex

Control Titer
(a) 4.2;(b) 4.8 dex

Lipid Solvent (chloroform)

After Treatment Titer

Control Titer

Lipid Solvent (deoxycholate)
1:400

After Treatment Titer
(a) 3.5;(b) 4.6 dex

Control Titer
(a) 4.6;(b) 5.3 dex

Other (formalin, radiation)

Virion Morphology

Shape
Orbivirus-like taxon

Dimensions
58-63 nm

Mean
nm

Range
nm

Measurement Method
Electron microscopy (1)

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

Hemaggiutination	Antigen Source	Erythrocytes (species used)
No	**SMB, blood, carcass, liver ext. by sucrose-acetone**	**Gander**
pH Range **6.0-7.6**	pH Optimum	
Temperature Range **RT**	Temperature Optimum	

Remarks

Serologic Methods Recommended
CF

Footnotes

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

No hemagglutin could be prepared but antisera to IN1074 (prepared in mice or rabbits by three or six weekly intraperitoneal inoculations) did not inhibit hemagglutination by antigens of Groups A (Sindbis, Getah, Ross River), B (Murray Valley encephalitis) or Koongol (Koongol, Wongal).
Complement-fixation tests (homologous titres - antigen = 32-64, mouse serum after inoculations = 64) and neutralization tests (homologous neutralization indices of mouse or rabbit antisera 1.6-2.1 dex) failed to show any relation- ship between IN1074, its antisera, and antigens or antisera to arboviruses previously isolated in Australia-Murray Valley encephalitis, Kunjin, Kokobera, Edge Hill, Stratford, Ross River, Sindbis, Getah, Koongol, Wongal, Corriparta, Mapputta, Kowanyama, Trubanaman, or to the exotic viruses Japanese B encephalitis, Bebaru, and dengue types 1-4 [2] .
Serologically related to Pata virus, DakAr 1327, isolated from a pool of 35 Aedes palpalis captured in Pata, Central African Republic in November 1968 ([4] , [5]).
The Eubenangee serogroup presently consists of three registered viruses including Eubenangee, Pata and Tilligerry viruses.

In addition, viruses of the bluetongue, Eubenangee and EHD serogroups share antigens which can be detected in complement-fixation tests and in agar-gel precipitin tests [8] - [10] .

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	
		Day (c)	Extent (d)	Titer TCD50/ml (e)	Day (c)	Size (f)	Titer PFU/ml (e)	+/- (g)	
PS (CL)			No CPE						
Vero (CL)			No CPE						
BHK-21 (CL)			No CPE					+	

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
Mixed mosquito pool *	1/29,395		Innisfail, N. Queensland, AS, 1963-64
Man		0/311 NT	Coastal areas of Queensland, AS
Cattle		3/36 NT	Mitchell River, AS
Kangaroo		5/50 NT	W. Queensland, AS
Wallaby		2/20 NT	Mitchell River, AS
Wallaby		10/49 NT	SE Queensland, AS
culicoides marksi	1		Beatrice Hill, No. Terr., Australia(7)
Cx. annulirostris	1		

Negative NT results were obtained with serum from the following species collected between 1958 and 1969 in various areas of Queensland: cattle, 60; horse, 50; sheep, 38; pig, 32; goat, 8; kangaroo, 4; bandicoot, 51; rat species, 85; Pteropus sp., 6; bat, 8; domestic fowl, 223; and wild birds, 36. (3)

* Mixed pool included 7 Culex (Lop) sp., 1 Cx sitiens, 3 Cx pullus, 6 Coquillettidia crassipes, 3 Hodgesia quasisanguineae, 1 Mansonia septempunctata, 3 Aedes notsocriptus, 1 Ae kochi, 3 Ae carmenti, 2 Anopheles bancroftii, and 1 An farauti.

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 4	ic 0.15	Death	6-9	7.0
Mice (nb)		ip 0.3	None		<3.5
Mice (nb)		sc			
Mice (wn)		ic 0.3	None		<3.5
Mice (wn)		ip			
Mice (nb)	SMB 16	ic 0.015	Death	4-6	7.5

Section IX - Experimental Arthropod Infection and Transmission

Arthropod species & virus source(a)	Method of Infection log10/ml (b)		Incubation period (c)		Transmision by bite (d)		Assay of arthropod, log10/ml (e)		
	Feeding	Injected	Days	°C	Host	Ratio	Whole	Organ	System
Culex quinquefasciatus (SMB 16)		Adults intrathoracically inoculated: multiplication demonstrated by titration of whole mosquitoes, content per mosquito 1.9 dex immediately after inoculation, 1.3 dex at 12 and 24 hours, 5.0 dex at 7 days, 3.5 dex at 15 days. Serial weekly passage of salivary gland inoculated into thorax maintained virus for 2 passages but not for 3. (4)							
Culicoides variipennis C. nubeculosis		Intrathoracically inoculated; multiplication (6).							
C. variipennis		Oral ingestion; multiplication and transmission (6).							

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)
Innisfail, North Queensland, Australia

Suspected (Antibody only detected)

Section XIII - References

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Remarks