Virus Name: Mapputta	Abbreviation: MAPV

Status
Possible Arbovirus

Select Agent
No

SALS Level
2

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

Other Information

Antigenic Group
Mapputta

SECTION I - Full Virus Name and Prototype Number

Prototype Strain Number / Designation
MRM 186

Accession Number

Original Date Submitted
2/5/1985

Family
Bunyaviridae

Genus
Bunayvirus-like

Information From
R.L. Doherty

Address
Queensland Institute of Medical Research, Herston Rd., Herston N9, Brisbane

Information Footnote
Reviewed by editor

Section II - Original Source

Isolated By (name)
Doherty, et al. (1)

Isolated at Institute
Brisbane

Host Genus
Anopheles meraukensis

Species

Host Age/Stage
Adult

Sex
Female

Isolated From

Isolation Details

Signs and Symptoms of Illness

Arthropod

Time Held Alive before Inoculation

Collection Method
Aspirated from man or horse

Collection Date
4/8/1960

Place Collected (Minimum of City, State, Country)
Mitchell River Mission, Queensland, AS

Latitude
15° 30' S

Longitude
141° 40' E

Macrohabitat
Low-lying plain bordering Gulf of Carpentaria; open forest-grassland

Microhabitat
On bank of creek on edge of aboriginal mission;mosquitoes were pooled from two areas on outskirts

Method of Storage until Inoculated
Dry ice and Revco

Footnotes

Section III - Method of Isolation

Inoculation Date
9/30/1960

Animal (Details will be in Section 6)
nb mice

Route Inoculated
Intracerebral

Reisolation
No

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) **1:500**	After Treatment Titer **<2.0 dex**	Control Titer **5.6 dex**

Other (formalin, radiation)

Virion Morphology

Shape

Dimensions
Passes 200 nm regularly; 100 nm on several occasions

Mean
nm

Range
nm

Measurement Method **Millipore filtration**	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; liver; and carcass ext. by sucrose-acetone; acetone-ether**	**Goose**
pH Range	pH Optimum	
Temperature Range	Temperature Optimum	

Remarks

Serologic Methods Recommended
CF, NT

Footnotes

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

Queensland studies:

No relationship by CF or neutralization test: MVE, Kunjin, Kokobera, Edge Hill, Sindbis, Koongol, Wongal, Corriparta, Getah or Bebaru viruses. Antigenically related by CF test to Trubanaman virus, MRM 3630 [4] .
Rockefeller Foundation Virus Laboratory studies:

CF antigen (homologous system titers 128/512) tested against known potent antisera to the following viruses, with no relationships demonstrated: Catu, Simbu, Pongola, Chenuda, Turlock, Tacaiuma, SF Naples, SF Sicilian, Rift Valley Fever (Lunyo), Quaranfil, Bwamba, Wad Medani, Wyeomyia, Kairi, Manzanilla, Oropouche, Guaroa, Anopheles A, Ketapang, Umbre, Lebombo, California encephalitis, Colorado tick fever, Witwatersrand, Bakau, Nyamanini, Tahyna, Junin, Guama, Mirim, Hart Park, Nepuyo, An 20076, Capim, Guajara, Aruac, Ieri, Triniti, Lukuni, Anopheles B, Navarro, Akabane.

Section VI - Biologic Characteristics

Virus Source (all VERTEBRATE isolates)
Blood (LV)(M), cerebro spinal fluid (M), CNS (LV), spleen (LV), skeletal muscles (LV) and sciatic nerve (LV)

Lab Methods of Virus Recovery (ALL ISOLATIONS)
Newborn and weanling mice, sheep and pig (1)

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)			CPE or plaques (6)						
BHK-21 (CL)			CPE or plaques (6)						
Vero (CL)			CPE or plaques (6)						
VSW (CL)			CPE or plaques (6)						
Vero (CL)	P-8				6	3 mm	6.0* (7)		
LLC-MK2 (CL)					8	1 mm	5.5 (7)		

* 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
Anopheles meraukensis	2/298 *		Mitchell River Mission, Queensland, AS, 1960

* Neither virus reisolated.

NOTE: Neutralizing antibody detected in serum from man, cattle, horses, pigs, kangaroos, wallabies, and rats from Queensland (5).

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)	MB 3	ic 0.01	Death	4.0	9.0
Mice (nb)		ip 0.03	Death	5.0	7.2
Mice (nb)		sc			
Mice (wn)		ic 0.03	Death	6.5	8.9
Mice (wn)		ip 0.03	Antibody production only		
embryonated eggs (7 days)		ys 0.1	No deaths at 10-2 dilution (2)		
embryonated eggs (11 days)		CAM 0.05	Pocks; no deaths at 10-2 dilution (2).		4.8

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	Adult mosquitoes intrathoracically inoculated; virus content of mosquitoes titrated in mice; 5.2/mosquito at 6 days (<1.3 after inoculation) Adult mosquitoes exposed to virus by membrane feeding; <1.87/mosquito at 15 days (4.1 after feeding)								

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

Suspected (Antibody only detected)

Section XIII - References

1. Doherty, R.L., et al. 1963. Aust. J. Exp. Biol. Med. Sci. 41:17-40.
2. Carley, J.G. Personal communication. 1963.
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4. Doherty, R.L., et al. 1968. Trans. R. Soc. Trop. Med. Hyg. 62:430-438.
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6. Queensland Inst. Med. Res. 1971. Unpublished observations.
7. Stim, T.B. 1969. J. Gen. Virol. 5:329-338.

Remarks