

Virus Name: Ngaingan		Abbreviation: NGAV
Status Possible Arbovirus	Select Agent No	SALS Level 2
SALS Basis Results of SALS surveys and information from the Catalogue.		
Other Information		
Antigenic Group Ungrouped		

SECTION I - Full Virus Name and Prototype Number

Prototype Strain Number / Designation MRM14556	Accession Number	Original Date Submitted 11/19/1984
Family Not listed	Genus Not listed	
Information From R.L. Doherty	Address Queensland Institute of Medical Research, Herston Rd., Brisbane, Q4006, Australia	
Information Footnote Reviewed by editor		

Section II - Original Source

Isolated By (name) R.L. Doherty, et al.	Isolated at Institute Brisbane	
Host Genus Culicoides brevitarsis Kieffer	Species	Host Age/Stage Adult
Sex Female		
<u>Isolated From</u>	<u>Isolation Details</u>	
Signs and Symptoms of Illness	Arthropod	
Time Held Alive before Inoculation		
Collection Method Truck trap	Collection Date 4/27/1970	
Place Collected (Minimum of City, State, Country) Mitchell River, Queensland, Australia		
Latitude 15° 30' S	Longitude 141° 40' E	
Macrohabitat Low lying plain bordering Gulf of Carpentaria	Microhabitat Arthropods taken on truck-trap route on edge of Aboriginal settlement	Method of Storage until Inoculated 5dC overnight, transported on liquid nitrogen, then stored in Revco at -60dC
Footnotes		

Section III - Method of Isolation

Inoculation Date
5/20/1971

Animal (Details will be in Section 6)
nb mice

Route Inoculated
Intracerebral

Reisolation
No

Other Reasons
Distinct from other viruses held in laboratory; evidence of multiplication in arthropods; antibody in area.

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 <2.0 dex	Control Titer 4.5 dex
Lipid Solvent (chloroform)	After Treatment Titer	Control Titer
Lipid Solvent (deoxycholate) 1:1000 final	After Treatment Titer <2.0 dex	Control Titer 4.4 dex
Other (formalin, radiation)		

Virion Morphology

Shape	Dimensions <220 nm	
Mean nm	Range nm	
Measurement Method Passed filter APD 220 nm, not filter APD 100 nm	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 No	Antigen Source SMB, blood ext. by sucrose-acetone	Erythrocytes (species used) Goose
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pH Range 6.0-7.6	pH Optimum
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Temperature Range RT	Temperature Optimum
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Remarks

Serologic Methods Recommended
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Footnotes

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

No antigenic relationship was detected by complement-fixation or neutralization tests between MRM14556 antigen or antiserum and the following arboviruses or suspected arboviruses isolated or available in Australia: Group A (Sindbis, Ross River, Getah, Bebaru); Group B (Murray Valley encephalitis, Kunjin, Kokobera, Edge Hill, Stratford, Alfuy, JBE, SLE, dengue types 1, 2, 3, and 4); Koongol group (Koongol, Wongal); Mapputta group (Mapputta, Trubanaman); Quarantil group (Abal); Simbu group (Akabane, Aino (Samford)); Corriparta group (Corriparta); Eubenangee group (Eubenangee); Warrego group (Warrego, Mitchell River); others (Kowanyama, Almpiwat, Upolu, ephemeral fever, Belmont, Charleville, Wallal and Wongorr). Antiserum to MK7532 (Mapputta group) repeatedly fixed complement with MRM14556 antigen but to low titre; further studies are needed.

Section VI - Biologic Characteristics

Virus Source (all VERTEBRATE isolates)
Blood (M)(LV), pool of heart, liver, spleen kidney (LV)

Lab Methods of Virus Recovery (ALL ISOLATIONS)
Newborn mice and chick embryo cell cultures

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 3		No CPE			No plaques			

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
Culicoides spp.	1/55,257		Mitchell River, Queensland, Australia 1969-70(1)
Wallabies		37/70	Queensland, Australia (1)
Kangaroos		2/20	
Cattle		5/50	
Man and other vertebrate species		0/245 NT	

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)	SMB 3	ic 0.015	Death		7.3
Mice (nb)		ip 0.03	No overt signs of infection		<3.5
Mice (nb)		sc			
Mice (wn)		ic 0.03	No overt signs of infection		<3.5
Mice (wn)		ip 0.1	Antibody production		

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
Aedes aegypti, SMB 3	Intrathoracically inoculated with 0.006 ml = 2.3 LD ₅₀ per mosquito; assay of virus content per mosquito by titration in infant mice. No virus detected 0.5 and 1 day after inoculation; titre increased to 5.1-5.5 LD ₅₀ per mosquito 4-12 days after inoc. (2).								

Section X - Histopathology

Character of lesions (specify host)		
<u>Inclusion Bodies</u>	<u>Intranuclear</u>	
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. 1973. Trans. Roy. Soc. Trop. Med. Hyg. 67:536-543. 2. Carley, J.G., et al. 1973. J. Med. Ent. 10:244-249.
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Remarks
