

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

SECTION I - Full Virus Name and Prototype Number

Prototype Strain Number / Designation CH12048 (5)	Accession Number	Original Date Submitted 11/14/1984
Family Reoviridae	Genus Orbivirus	
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) Doherty, et al.	Isolated at Institute Brisbane	
Host Genus Culicoides dycei Lee and Reye	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 2/22/1970	
Place Collected (Minimum of City, State, Country) Charleville, Queensland, Australia		
Latitude 26° 10' S	Longitude 145° 50' E	
Macrohabitat Near town of Charleville, 965 ft; open eucalypt forest and grassland; truck-trap	Microhabitat route between Charleville and Wallal, parallel to Warrego River	Method of Storage until Inoculated 5dC overnight, transported in liquid nitrogen then in Revco at -60dC
Footnotes		

Section III - Method of Isolation

Inoculation Date

4/17/1970

Animal (Details will be in Section 6)

nb mice

Route Inoculated

Intracerebral

Reisolation

Yes

Other Reasons

Six other isolates from same area and period

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 4.0 dex	Control Titer 4.5 dex
Lipid Solvent (chloroform)	After Treatment Titer	Control Titer
Lipid Solvent (deoxycholate) 1:1000 final	After Treatment Titer 4.3 dex	Control Titer 4.2 dex
Other (formalin, radiation)		

Virion Morphology

Shape Orbivirus taxon (5)	Dimensions <220 nm	
Mean nm	Range nm	
Measurement Method Passed filter APD 220nm. failed to	Surface Projections/Envelope	Nucleocapsid Dimensions, Symmetry

pass APD 100nm

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, then protamine tr., sonication or trypsin	Erythrocytes (species used) Goose
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

Studies at Queensland Institute of Medical Research:

No antigenic relationship was detected by complement-fixation or neutralization tests between CH12048 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, MK7532); Quarantfil group (Abal); Simbu group (Akabane, Aino, (Samford)); Corriparta group (Corriparta); Eubenangee group (Eubenangee); Warrego group (Warrego, Mitchell River); others (Kowanyama, Almpiwari, Upolu, ephemeral fever, Belmont, Charleville, Wongorr and Ngaingan). A virus strain isolated from *Culicoides marksii* was shown to be antigenically related to but distinct from Wallal virus. The name Mudjinbarry virus was suggested for it [5].

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)		
PS (CL)						Plaques	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
Culicoides spp.	7/16,529		Charleville, Queensland, AS, 1970 (1)
Wallabies		9/66 NT	Queensland, AS (1)
Kangaroos		6/20 NT	Queensland, AS
Various other vertebrate species		2/340 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 log10/ml
Mice (nb)	SMB 3	ic 0.015	Death	4	6.7
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 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, SMB 5	Intrathoracically inoculated with 0.0006 ml = 1.0 LD50 per mosquito; virus content per mosquito assayed by titration in infant mice. No virus detected at 0.5, 1 and 2 days; detectable thereafter reaching 3.7-4.3 LD50 per mosquito at 10-15 days.								

Section X - Histopathology

Character of lesions (specify host)

Inclusion BodiesIntranuclear

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. R. Soc. Trop. Med. and Hyg. 67:536-543.
2. Carley, J.G., et al. 1973. J. Med. Ent. 10:244-249.
3. Director, Queensland Inst. Med. Res. Personal communication. 1972.
4. Doherty, R.L. Personal communication. 1972.
5. Doherty, R.L., et al. 1978. Aust. J. Biol. Sci. 31:97-103.

Remarks