Virus Name: Charleville	Abbreviation: CHVV

Status
Possible Arbovirus

Select Agent
No

SALS Level
2

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

Other Information

Antigenic Group
Mossuril

SECTION I - Full Virus Name and Prototype Number

Prototype Strain Number / Designation
Ch9824

Accession Number

Original Date Submitted
11/21/1984

Family
Rhabdoviridae

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
Phlebotomus spp.

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 trap

Collection Date
2/19/1969

Place Collected (Minimum of City, State, Country)
Charleville, Australia

Latitude
26° 10' S

Longitude
145° 50' E

Macrohabitat
Near Charleville 965' above sea, ann. rainfall 19.47" open eucalypt forest and grassland

Microhabitat
Light trap near Warrego River on edge of town

Method of Storage until Inoculated
Overnight at 5dC, transported on liquid nitrogen, then in Revco at -60dC

Footnotes

Section III - Method of Isolation

Inoculation Date
3/13/1969

Animal (Details will be in Section 6)
nb mice

Route Inoculated
Intracerebral

Reisolation
Yes

Other Reasons
Other isolates from Phlebotomus collected in the same 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 **2.8 dex**	Control Titer **4.0 dex**
Lipid Solvent (chloroform)	After Treatment Titer	Control Titer
Lipid Solvent (deoxycholate) **1:1000 final**	After Treatment Titer **2.0 dex**	Control Titer **3.9 dex**

Other (formalin, radiation)

Virion Morphology

Shape **Rhabdovirus morphology (3)**	Dimensions	
Mean nm	Range nm	
Measurement Method **By electron microscopy (3)**	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 ext. by sucrose-acetone + prot. tr., sonication or trypsin.**	**Goose**
pH Range **6.0-7.6**	pH Optimum	
Temperature Range	Temperature Optimum	
Remarks		
Serologic Methods Recommended **CF, NT**		
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 test between Ch9824 antigen or antiserum and the 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 1-4);		
Koongol group	(Koongol, Wongal);		
Mapputta group	(Mapputta, Trubanaman, MK7532);		
Quaranfil group	(Abal);	Simbu group	(Akabane, Aino (Samford));
Corriparta group	(Corriparta);	Eubenangee group	(Eubenangee);
Warrego group	(Warrego, Mitchell River);		
others	(Kowanyama, Almpiwar, Upolu, ephemeral fever, Belmont, Wallal, Wongorr and Ngaingan).		

Similar negative results from neutralization tests are of limited value as homologous antiserum gave only low titre neutralization.

Studies at Yale Arbovirus Research Unit

J.G. Carley and R.E. Shope tested Ch9824 antigen against ascitic fluids to the following with negative results: Groups A, B, C, Anopheles A-Anopheles B-Turlock, Bunyamwera, California, Capim, Guama, Phlebotomus fever,'Poly-Johnston-Atoll', Tacaribe, vesicular stomatitis, Irituia, Simbu, and individual viruses: rabies, LCM, Uukuniemi, Witwatersrand, Argas 461, Bhanja, Congo, Nyamanini, Thogoto, Wanowrie, Lagos bat, ETH Ar 1864-64, Wad Medani, Bandia, Shuni, IbAn 17143, Jos, Gabek For. (IbAn 10065), Tataguine, Naples SF, Orungo (IbAn 11306), IbAn 20433, Apeu, Sindbis, Grand Arbaud, Junin, Capim, Bertioga, La Crosse, Punta Toro, Jurona, Tembe, Bunyamwera, Bwamba, Bakau, Nyando, Piry, Turlock, Mossuril, Tete, Tacaribe, Ganjam, Kaisodi, Kemerovo, Qalyub, Germiston, Ilesha, Kairi, Sororoca, Wyeomyia, Caraparu, Nepuyo, Oriboca, Gumbo Limbo, Bushbush, Guajara, Tamiami, Hart Park, Marco, Belagodu, Pak Argas T487, Hazara, Agua Preta, Buenaventura, Nkolbisson, EgAn 1477-61, EgAn 1825-61, EgAn 3782-61, Mt. Elgon bat, Palyam, Minnal, Oyo.

Section VI - Biologic Characteristics

Virus Source (all VERTEBRATE isolates)
Heart (LV), lung (LV), liver (LV)

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)	SMB 3-5		No CPE			No plaques			
Vero (CL)			No CPE			No plaques			
Vero and VSW(CL)			No CPE			No plaques			
BHK-21 (CL)			No CPE					-(4)	
C6/36 (CL)		4	No CPE	4.0*				+(4)	
Vero (CL)					8-9	Plaques (4)			

* 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
Phlebotomus spp.	4/1,197		Charleville, Queensland, Australia, 1969 (1)
Gehyra australis (lizard)	1/6 *		Mitchell River, Australia, 1970 (1)
Various species of vertebrates		1/317 ** NT	Queensland, Australia (1)

* Three isolations from the single positive animal.

** Low titre neutralization detected with homologous mouse antiserum makes these results of doubtful significance.

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	7.4
Mice (nb)		ip 0.03	Death	4	5.4
Mice (nb)		sc			
Mice (wn)		ic 0.03	No overt signs of infection		<3.5
Mice (wn)		ip 0.1	Development of CF antibody		

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
Aedes aegypti, SMB 5	Intrathoracically inoculated with 0.0006 ml = 1.3 LD50 per mosquito. Virus content per mosquito determined by titration in suckling mice. No virus detected at 0.5 and 1.0 days; virus content increased to >5.8 LD50/mosquito 4-20 days after inoculation (2).								

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. 1973. Trans. Roy. Soc. Trop. Med. Hyg. 67:536-543.
2. Carley, J.G., et al. 1973. J. Med. Ent. 10:244-249.
3. Tesh, R.B. and Whitfield, S.G. Personal communication. 1980.
4. Kerschner, J. Personal communication. 1983.

Remarks