

Virus Name: Jugra		Abbreviation: JUGV
Status Probable Arbovirus	Select Agent No	SALS Level 2
SALS Basis Results of SALS surveys and information from the Catalogue.		
Other Information		
Antigenic Group B		

SECTION I - Full Virus Name and Prototype Number

Prototype Strain Number / Designation P9-314	Accession Number	Original Date Submitted 8/10/1984
Family Flaviviridae	Genus Flavivirus	
Information From Albert Rudnick	Address Hooper Foundation, University of California, San Francisco, CA 94143	
Information Footnote Reviewed by editor		

Section II - Original Source

Isolated By (name) Arbovirus Res. Unit, UC ICMR*	Isolated at Institute Kuala Lumpur, Malaysia	
Host Genus Aedes (Can) spp., pool of 49 mosquitoes	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 D-vac and mechanical aspirator	Collection Date 11/11/1968	
Place Collected (Minimum of City, State, Country) Jugra Forest Reserve, Carey Island, Malaysia		
Latitude 2° 8' N	Longitude 101° 23' E	
Macrohabitat Mangrove swamp forest	Microhabitat Ground level and in crab holes in ground	Method of Storage until Inoculated Revco cabinet at -70dC
Footnotes		

Section III - Method of Isolation

Inoculation Date
3/20/1969

Animal (Details will be in Section 6)
nb mice

Route Inoculated ic and ip	Reisolation Yes
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Other Reasons
First virus of this type in laboratory. 2 additional isolates from other sources.

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) 1:100	After Treatment Titer <2.0 dex	Control Titer 8.8 dex
Other (formalin, radiation)		

Virion Morphology

Shape	Dimensions	
Mean nm	Range nm	
Measurement Method	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

Antigen Source

Erythrocytes (species used)

Yes

SMB ext. by sucrose-acetone

Goose

pH Range

pH Optimum

6.6-7.0

6.8

Temperature Range

Temperature Optimum

Only 37dC tested

Remarks

*** University of California International Center for Medical Research**

Serologic Methods Recommended

HI, CF, PRNT

Footnotes

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

	JUGRA (P9-314) Antigen/Virus			JUGRA (P9-314) Antiserum **	
	HI(8u)	CF	PRNT *	CF	PRNT
	Ht/Ho	Ht/Ho	Ht/Ho	Ht/Ho	Ht/Ho
Batu Cave	20/160	0/32	0/320	0/64	0/400
Bukalasa Bat	20/ND	0/ND	0/320		0/400
Carey Island	20/160	0/32	0/2000	16/64	0/400
Dakar Bat	40/160	0/128	25/320	8/64	0/400
Entebbe Bat	20/320	0/16	0/ND	8/64	
JBE	20/640	0/32	15/320	0/64	
Langat	10/160	8/32	45/ND	8/64	
MML	0/40	0/16	0/ND	0/64	
Rio Bravo	40/160	0/32	15/ND	8/64	
Tembusu	20/320	0/32	15/>500	8/64	

* Expressed as reciprocal of serum dilution showing 50% plaque reduction in Vero cells.

** Hyperimmune mouse serum prepared with 5 1P inoculations.

Jugra (P9-314) antigen also was tested by HI, CF, and/or PRNT with antisera for the following group B viruses and shown not to be the same: DEN-1, DEN-2, DEN-3, DEN-4, ILH, MVE, NTA, SLE, SPO, UGS, WSL, WN, YF, and ZIKA.

Section VI - Biologic Characteristics

Virus Source (all VERTEBRATE isolates)
Blood (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 +/- (g)
		Day (c)	Extent (d)	Titer TCD50/ml (e)	Day (c)	Size (f)	Titer PFU/ml (e)	
Vero (CL)	SMB 4					7.6 (a)		

(a) 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
Aedes (Can) spp.	1/many		Carey Island, Malaysia
Uranotaenia spp.	1/many		Tanjong Rabok, Selangor, Malaysia
Cynopterus brachyotis (bat; blood)	1/many		Carey Island, Malaysia

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) Peninsular Malaysia
Suspected (Antibody only detected)

Section XIII - References

1. University of California International Center for Medical Research, San Francisco. Unpublished data. 1972.

Remarks

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