

<b>Virus Name: Bakau</b>		<b>Abbreviation: BAKV</b>
Status <b>Possible Arbovirus</b>	Select Agent <b>No</b>	SALS Level <b>2</b>
SALS Basis <b>Results of SALS surveys and information from the Catalogue.</b>		
Other Information		
Antigenic Group <b>Bakau</b>		

**SECTION I - Full Virus Name and Prototype Number**

Prototype Strain Number / Designation <b>MM-2325</b>	Accession Number	Original Date Submitted <b>1/25/1985</b>
Family <b>Bunyaviridae</b>	Genus <b>Bunya-like</b>	
Information From <b>Elisberg/Buescher</b>	Address <b>Dept. of Virus Diseases, WRAIR, Washington, D.C. 20012</b>	
Information Footnote <b>Reviewed by editor</b>		

**Section II - Original Source**

Isolated By (name) <b>US Army Med. Res. Unit (1)</b>	Isolated at Institute <b>Kuala Lumpur, Malaya</b>	
Host Genus <b>Culex (Lophoceratomyia) spp.</b>	Species	Host Age/Stage <b>Adult</b>
Sex <b>Female</b>		
<u>Isolated From</u>	<u>Isolation Details</u>	
Signs and Symptoms of Illness	Arthropod	
Time Held Alive before Inoculation		
Collection Method <b>From human subjects</b>	Collection Date <b>1/25/1956</b>	
Place Collected (Minimum of City, State, Country) <b>Rantau Panjang, Malaysia</b>		
Latitude <b>3° 3' N</b>	Longitude <b>101° 23' E</b>	
Macrohabitat <b>Coastal Nipah palm-mangrove swamp</b>	Microhabitat <b>Small clearing in swamp, remote from human habitation</b>	Method of Storage until Inoculated <b>Held alive for 72 hours</b>
Footnotes		

**Section III - Method of Isolation**

Inoculation Date  
**1/28/1956**

Animal (Details will be in Section 6)  
**nb mice**

Route Inoculated <b>Intracerebral</b>	Reisolation <b>No</b>
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Other Reasons  
**No identical strain in laboratory at time of original isolation**

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) <b>1:20</b>	After Treatment Titer <b>&lt;4.6 dex</b>	Control Titer <b>8.6 dex</b>
Lipid Solvent (deoxycholate) <b>1:1000</b>	After Treatment Titer <b>&lt;4.6 dex</b>	Control Titer <b>8.6 dex</b>
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
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Inclusion Bodies	Other
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**Hemagglutination**

Hemagglutination	Antigen Source <b>SM serum ext. by acetone-ether</b>	Erythrocytes (species used) <b>Chicks</b>
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pH Range <b>5.0-6.0</b>	pH Optimum <b>5.6</b>
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Temperature Range <b>4dC, 27dC, 37dC</b>	Temperature Optimum <b>27dC</b>
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Remarks

**HA antigen also prepared from infected suckling mouse brain by sucrose-acetone method (1)**

Serologic Methods Recommended

**HI, CF, NT**

Footnotes

**HA antigen also prepared from infected suckling mouse brain by sucrose-acetone method (1)**

Bakau Antigen/Virus						
Immune Serum	HI		CF		NT Ht/Ho	
	Ht/Ho	Ratio	Ht/Ho	Ratio		
Ketapang	<10/640	>1/64	20/320	1/16	0.1/3.3	

Bakau Immune Serum						
Antigen/Virus	HI		CF		NT Ht/Ho	
	Ht/Ho	Ratio	Ht/Ho	Ratio		
Ketapang	<10/160	>1/16	80/80	1	0.4/>5.1	

HI Tests:

Bakau antigen not inhibited by group immune guinea pig sera for Groups A, B, C, and Bunyamwera [2].

Bakau immune sera did not react with antigens from eastern, western and Venezuelan equine encephalitis, Mayaro, Semliki, Ilheus, Ntaya, yellow fever, Murray Valley encephalitis, St. Louis, Marituba, Oriboca, Caraparu, Bunyamwera, Cache Valley and Guaroa viruses [2].

CF Tests:

Bakau antigens did not react with immune sera from Mayaro, western equine encephalitis, chikungunya, Ilheus, Japanese encephalitis, RSSE, Murray Valley encephalitis, Murutucu, Caraparu, Bunyamwera, Chittoor, Guaroa, Kairi, Wyeomyia, California encephalitis, and Rift Valley fever viruses.

**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)	P-10				4	2 mm	6.7* (5)	
LLC-MK2 (CL)					3	1 mm	7.0 (5)	
BHK-21 (CL)	MB 9	2-3	4+	8.0* (6)				

\* Expressed in dex

Vertebrate (species and organ) and arthropod	No. isolations/No. tested	No. with antibody/No. tested Test used	Country and region
Cx (Lop) spp.	1/7 pools (1,563 mosquitoes)		Rantau Panjang, Malaysia
Argas abdussalami	18/19		Lahore, West Pakistan (3)
Man		14/97 NT	Kuala Lumpur, Malaysia
Man		21/74 NT	Kuantan, Malaysia
Man		20/98 NT	Rantau Panjang, Malaysia
Culex sp. No. 1	2		Malaysia (4)
Culex sp. No. 3	1		
Wild Macaca fascicularis (blood)	1		
NT: >1.8 dex neutralizing antibody considered positive			

**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 9	ic 0.015	Death	4	9.1
Mice (nb)		ip			
Mice (nb)		sc			
Mice (wn)	SMB 6	ic 0.03	Death	5	7.3
Mice (wn)		ip			
rabbit (ad)		ip 1.0x4	Neutralizing antibody		

**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

**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) <b>Malaysia; Pakistan (3)</b>
Suspected (Antibody only detected)

**Section XIII - References**

<ol style="list-style-type: none"><li>1. Inst. Med. Res., Kuala Lumpur, Malaysia. 1957. Unpublished results.</li><li>2. Rockefeller Foundation Virus Laboratories, New York. 1960. Unpublished results.</li><li>3. Subcommittee on Information Exchange, ACAV. 1970. Am. J. Trop. Med. Hyg. 19:1083.</li><li>4. Rudnick, A. Personal communication. April 1972.</li><li>5. Stim, T.B. 1969. J. Gen. Virol. 5:329-338.</li><li>6. Karabatsos, N. and Buckley, S.M. 1967. Am. J. Trop. Med. Hyg. 16:99-105.</li></ol>
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**Remarks**

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