Virus Name: Olifantsvlei	Abbreviation: OLIV

Status
Possible Arbovirus

Select Agent
No

SALS Level
2

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

Other Information

Antigenic Group
Olifantsvlei

SECTION I - Full Virus Name and Prototype Number

Prototype Strain Number / Designation
SaAr 5133

Accession Number

Original Date Submitted
9/30/1975

Family
Bunyaviridae

Genus
Bunyavirus

Information From
B.M. McIntosh;

Address
South African Institute for Medical Research, P.O. Box 1038, Johannesburg 2001

Information Footnote

Section II - Original Source

Isolated By (name)
B.M. McIntosh

Isolated at Institute
S.A.I.M.R. Johannesburg

Host Genus
Culex pipiens pool of 250 mosquitoes

Species

Host Age/Stage
adults

Sex
Female

Isolated From

Isolation Details

Signs and Symptoms of Illness

Arthropod

Time Held Alive before Inoculation
12 hours

Collection Method
Solid CO2 baited traps

Collection Date
1/8/1963

Place Collected (Minimum of City, State, Country)
Olifantsvlei sewage farm, Johannesburg, S. Africa

Latitude
26° S

Longitude
28° E

Macrohabitat
Grassland, plateau, 1500 m.

Microhabitat
Riverine reed bed, ground level

Method of Storage until Inoculated
Solid CO2

Footnotes

Section III - Method of Isolation

Inoculation Date
2/15/1963

Animal (Details will be in Section 6)
nb mice

Route Inoculated
Intracerebral

Reisolation
Not tried

Other Reasons
AR 5133 immunologically distinct from other viruses in laboratory; isolated from mosquitoes collected elsewhere in Africa

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) **1:1000**	After Treatment Titer **<1.8**	Control Titer **4.8**

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

Hemaggiutination	Antigen Source	Erythrocytes (species used)
Yes	**Infant mouse brain sucrose-acetone extracted**	**Goose**
pH Range **5.8-6.2**	pH Optimum **5.8**	
Temperature Range **Room**	Temperature Optimum	

Remarks
Low HA titers 1/64-1/128 not obtained cosistenly

Serologic Methods Recommended
CF, HI, NT

Footnotes
Low HA titers 1/64-1/128 not obtained cosistenly

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

1. ?? a, Ilesha, Germiston, Kairi, Cache Valley ?? Shokwe viruses, but by HI an AR 5133 antigen was inhibited by Bunyamwera group antiserum (32 Units of antigen inhibited), Bunyamwera (8 units), Shokwe (8 units), Kairi (4 units), Ilesha (2 units), [2] .
2. CF tests at YARU and at Institute Pasteur, Dakar, showed a reciprocal cross- relationship between Olifantsvlei and Bobia viruses [1] , [6] . In addition, neutralization tests also conducted at the Institute Pasteur, Dakar, have confirmed an antigenic relationship between the two viruses [6] .
3. By HI Olifantsvlei and Bobia viruses were classified as a serogroup (Olifantsvlei) within the Bunyamwera super-group [1] .

Section VI - Biologic Characteristics

Virus Source (all VERTEBRATE isolates)

Lab Methods of Virus Recovery (ALL ISOLATIONS)
Vero cell cultures

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)	

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
Culex pipiens	1		Transvaal, S. Africa
Mansonia uniformis	1		Sudan (5)
Culex poicilipes	1		Ethiopia (7)

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)		ic	Death	3	6.6
Mice (nb)		ip			
Mice (nb)		sc	Death	6-10	5.0
Mice (wn)		ic			
Mice (wn)		ip			

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
Culex fatigans		Intrathoracic inoc.					Multiplication of virus in 1 out of 25 mosquitoes (2).		
Culex univittatus		Intrathoracic inoc.					Multiplication of virus in 2 out of 25 mosquitoes (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)
South Africa (2), Sudan (5), Ethiopia (7)

Suspected (Antibody only detected)

Section XIII - References

1. Shope, R.E., Director, YARU. 1969. Personal communication.
2. McIntosh, B.M. 1963. Unpublished work.
3. Murphy, F.A., et al. 1973. Intervirology I:297-316.
4. Porterfield, J.S., et al. 1973-74. Intervirology 2:270-272.
5. Schmidt, J.R., et al. 1965. East African Virus Res. Report 15:24-26.
6. Bres, P. 1969. Personal communication.
7. Ota, W., et al. 1976. J. Med. Entomol. 13:173-178.

Remarks

On the basis of immunological relationships Olifantsvlei group viruses were assumed to possess similar morphologic and morphogenetic characteristics as other Bunyamwera and Bunyamwera-like viruses and listed as members of the Bunyavirus genus. (3, 4).