

**Virus Name: Olifantsvlei**

**Abbreviation: OLIV**

**Status:** Possible Arbovirus

**SALS Level:** 2

**Antigenic Group:** Olifantsvlei

**Taxonomic status:** *Bunyavirus*

**Other Information:** None.

**Select Agent:**

**SALS Basis:** S

**HEPA Filtration:**

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

**Full Virus Name:**

**Olifantsvlei**

**Prototype Number:**

SaAr 5133

**Information from:** B.M. McIntosh;

**Date:**

9/30/1975

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

\*

**Section II - Original Source**

**Isolated by:** B.M. McIntosh

**at:** S.A.I.M.R. Johannesburg

**Genus and species:** *Culex pipiens* pool of 250 mosquitoes **Sentinel** X

**Age/Stage:** adults **Sex:** F

Isolated From	Isolation detail
---------------	------------------

**Signs and symptoms of illness:**

**Arthropod engorged** depleted **gravid**

**Time held alive before inoculation:** 12 hours

**Collection date:** 1/8/1963 **Method:** Solid CO2 baited traps

**Place collected:** 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 and Validity**

**Inoculation Date:** 2/15/1963

**Animal:** nb mice

(Details in Section VI - Biologic Char.)

**Embryonated egg:**

**Tissue Culture:**

**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** (See Section II):

**Test used:** HI

CF

NT

**Other:**

**Footnotes:**

#### Section IV - Virus Properties

---

##### Physicochemical:

RNA: DNA: Single Strand: Double Strand:  
Pieces: Infectivity: Sedimentation coefficient(s): /strong>  
Percentage wt. of virion protein , lipid carbohydrate  
Virion polypeptides:  
Number: Details:  
Non-virion polypeptides:  
Number: Details:  
Virion density: Sedimentation coefficient:  
Nucleocapsid density Sedimentation coefficient:

---

##### Stability of infectivity (effects) pH

Lipid solvent:  
(ether) After treatment titer Control titer  
(chloroform) After treatment titer Control titer  
Detergent:  
(deoxycholate) 1:1000 After treatment titer <1.8 Control titer 4.8  
Other (formalin, radiation):

---

##### Virion morphology:

Shape Dimensions  
Mean (nm) range (nm) how measured  
Surface projections, envelope  
Nucleocapsid dimensions, symmetry

---

##### Morphogenesis:

Site of constituent formation in cell  
Site of virion assembly  
Inclusion bodies  
Other

---

##### Hemagglutination:

Hemagglutination Yes Antigen source Infant mouse brain sucrose-acetone extracted  
Erythrocytes Goose pH range 5.8-6.2 pH optimum 5.8  
Temperature optimum range Room  
Remarks Low HA titers 1/64-1/128 not obtained consistently  
Serologic methods recommended CF, HI, NT  
Footnotes: Low HA titers 1/64-1/128 not obtained consistently

## 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

**Susceptibility of Cell Culture Systems:**

Cell system (a)	Virus passage history (b)	Evidence of Infection							Growth Without CPE +/- (g)
		CPE			PLAQUES				
		Day (c)	Extent (d)	Titer TCD50/ml (e)	Day (c)	Size (f)	Titer PFU/ml (e)		
.	.	.	.	.	.	.	.	.	

**Section VII - Natural Host Range**

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 (Record 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			

