| Virus Name: Lebombo | Abbreviation: LEBV |
|---|---|

Status
**Probable Arbovirus**

Select Agent
**No**

SALS Level
**2**

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

Other Information

Antigenic Group
**Ungrouped**

## SECTION I - Full Virus Name and Prototype Number

Prototype Strain Number / Designation
**SAAr 136**

Accession Number

Original Date Submitted
10/14/1984

Family
**Reoviridae**

Genus
**Orbivirus**

Information From
**B.M. McIntosh**

Address
**National Institute for Virology, P/Bag X4, Sandringham, 2131, South Africa**

Information Footnote
**Revised**

## Section II - Original Source

Isolated By (name)
**S. African Inst. for Med. Res.**

Isolated at Institute
**Johannesburg**

Host Genus
**Aedes circumluteolus**

Species

Host Age/Stage
**Adult**

Sex
**Female**

Isolated From

Isolation Details

Signs and Symptoms of Illness

Arthropod

Time Held Alive before Inoculation

Collection Method

Collection Date
**1/26/1956**

Place Collected (Minimum of City, State, Country)
**Ndumu, Natal, South Africa**

Latitude
**27° S**

Longitude
**32° E**

Macrohabitat
**Tropical, coastal lowland; savannah woodlan**

Microhabitat

Method of Storage until Inoculated
**Solid CO2**

Footnotes

## Section III - Method of Isolation

Inoculation Date
**1/28/1956**

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

Route Inoculated
**Intracerebral**

Reisolation
**Not tried**

Other Reasons
**Further isolations from same species at Ndum**

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)<br>**20%** | After Treatment Titer<br>**Increase 0.3 (1)** | Control Titer |
| Lipid Solvent (chloroform) | After Treatment Titer | Control Titer |
| Lipid Solvent (deoxycholate) | After Treatment Titer<br>**Mean loss 0.5 (1)** | Control Titer |

Other (formalin, radiation)
**Labile at pH 3.0 (1)**

**Virion Morphology**

| | | |
|---|---|---|
| Shape | Dimensions | |
| Mean<br>nm | Range<br>**65-70**nm | |
| Measurement Method<br>**Electron microscopy (2)** | Surface Projections/Envelope | Nucleocapsid Dimensions, Symmetry |

**Morphogenesis**

| Site of Constituent Formation in Cell | Site of Virion Assembly | Site of Virion Accumulation |
|---|---|---|
| | | **Virions associated with cytoplasmic matrix (2)** |
| Inclusion Bodies | Other | |

**Hemagglutination**

| Hemaggiutination | Antigen Source | Erythrocytes (species used) |
|---|---|---|
| **No** | **SMB ext. by sucrose-acetone** | **Goose** |
| pH Range | pH Optimum | |
| Temperature Range | Temperature Optimum | |

Remarks

Serologic Methods Recommended
**CF, NT**

Footnotes

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

Antigen of Lebombo was tested by CF against polyvalent grouping and/or specific antisera for serogroups A, B, C, Bunyamwera, Simbu, California, Guama, Quaranfil, Bandia, Kaisodi, Anopheles A, Turlock Phelobotomus fever and Capim; VSV (3 serotypes), rabies, arenoviruses Tacaribe, LCM; herpes simplex; vaccinia; reovirus 3, bluetongue, Corriparta, Changuinola, Colorado tick fever, Kemerovo, Palyam, Aus CH 9935, and Orungo. No cross-reactivity was observed [1] .
Regarded as a serologically unrelated orbivirus [1] - [3] .

## Section VI - Biologic Characteristics

Virus Source (all VERTEBRATE isolates)
**CNS (LV), lung (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) | |
| Aedes albopictus(CL) | MB 22 | | No CPE | 7.5* (4) | | | | + (4) | |
| Vero (CL) | | | | | 3 | 3 mm | 6.2* (9) | | |
| LLC-MK2 (CL) | | | | | 3 | 1 mm | 8.4 (9) | | |

* 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 |
|---|---|---|---|
| Man | 1 | | Nigeria (5) |
| Man | | 0/176 NT | South Africa (7) |
| Man | | 0/47 NT | Mozambique (7) |
| Man | | 0/59 NT | Caprivi, Botswana (7) |
| Thryonomys swinderianus (rodent) | 1 | | High forest in Nigeria (6) |
| Aedes circumluteolus | 3 | | Natal, South Africa(7) |
| Mansonia africana | 1 | | Nigeria (8) |

## 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) | Ar 136 | ic | Death | 2-3 | 8.9 |
| Mice (nb) | | ip | | | |
| Mice (nb) | | sc | | | |
| Mice (wn) | | ic | Death | 6-8 | 6.4 |
| Mice (wn) | | ip | | | |
| guinea pigs | Ar 3896 | ic | Antibody response | | |

## 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 quinquefasciatus | | 8.7 | 11 | 26 | Not done | | 8.2 (7) | | |

## 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

**Reported**

Subclinical — Overt Disease

Clinical Manifestations

Number of Cases — Category (i.e. febrile illness, etc.)

**One** — **Febrile illness**

## Section XII - Geographic Distribution

Known (Virus detected)

**South Africa (7), Nigeria (5,6)**

Suspected (Antibody only detected)

## Section XIII - References


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## Remarks