| Virus Name: Mosqueiro | | Abbreviation: MQOV |
|---|---|---|
| Status<br>**Possible Arbovirus** | Select Agent<br>**No** | SALS Level<br>**3** |

SALS Basis
**Isufficient experience with virus; i.e., experience factor from SALS surveys was less than 500 in laboratory facilities with low biocontainment.**

Other Information

Antigenic Group
**Lart Park**

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

| Prototype Strain Number / Designation | Accession Number | Original Date Submitted |
|---|---|---|
| **BeAr 185559** | | 5/8/1984 |

| Family | Genus |
|---|---|
| **Rhabdoviridae** | **Not listed** |

| Information From | Address |
|---|---|
| **F. Pinheiro and Amelia P.A.T. Rosa** | **Instituto Evandro Chagas, FSESP, Brazilian Ministry of Health, CP 621, 66.000 Belem, Para** |

Information Footnote
**Revised**

**Section II - Original Source**

| Isolated By (name) | Isolated at Institute | |
|---|---|---|
| **Belem Virus Laboratory** | **Belem, Para, Brazil** | |
| Host Genus<br>**Culex portesi (pool of 36 parous females) (1)** | Species | Host Age/Stage<br>**Adult** |

Sex
**Female**

| Isolated From | Isolation Details |
|---|---|
| Signs and Symptoms of Illness | Arthropod<br>**Engorged** |

Time Held Alive before Inoculation
**2-7 hours**

| Collection Method | Collection Date |
|---|---|
| **Trinidad no. 17 trap baited with mice** | **5/21/1970** |

Place Collected (Minimum of City, State, Country)
**APEG, IPEAN, Belem**

| Latitude | Longitude |
|---|---|
| **1° 28' S** | **48° 27' W** |

| Macrohabitat | Microhabitat | Method of Storage until Inoculated |
|---|---|---|
| **Tropical forest highland** | **Primary vegetation, ground level** | **At -60dC** |

Footnotes

## Section III - Method of Isolation

Inoculation Date
**5/22/1970**

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

Route Inoculated
**Intracerebral**

Reisolation
**Yes**

Other Reasons

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)<br>**1:1000** | After Treatment Titer<br>**2.7 dex** | Control Titer<br>**4.9 dex** |

Other (formalin, radiation)

**Virion Morphology**

| | | |
|---|---|---|
| Shape<br>**Bullet** | Dimensions<br>**304 x 40 nm** | |
| Mean<br>**209 nm**nm | Range<br>**109-400 nm**nm | |
| Measurement Method<br>**Electron microscopy (2)** | Surface Projections/Envelope<br>**Presence of envelope. No surface projections.** | Nucleocapsid Dimensions, Symmetry<br>**40 nm (29-55 nm)** |

**Morphogenesis**

| Site of Constituent Formation in Cell | Site of Virion Assembly | Site of Virion Accumulation |
|---|---|---|
| | **Cellular membrane** | **Interstitial spaces** |

| Inclusion Bodies | Other |
|---|---|
| **No** | |

**Hemagglutination**

| Hemaggiutination | Antigen Source | Erythrocytes (species used) |
|---|---|---|
| **No** | **SMB ext. by sucrose-acetone + sonication** | **Goose** |

| pH Range | pH Optimum |
|---|---|
| **5.8-7.0** | |

| Temperature Range | Temperature Optimum |
|---|---|
| | **RT and 37dC** |

Remarks

Serologic Methods Recommended
**CF, NT**

Footnotes

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

The antigen of Mosqueiro virus did not react in CF tests with the following grouping ascitic fluids distributed by the National Institutes of Health: groups A, B, C, Guama, Bunyamwera, Capim, Simbu, VSV, Phlebotomus, Tacaribe, California, Sakhalin, and Kemerovo; or with polyvalents Quaranfil, Patois, rabies, etc. (rabies, LCM, NDV, Herpes simplex, vaccinia), Palyam, Congo, Anopheles A, etc. (groups Anopheles A, Anopheles B, and Turlock), 1, 2, 3, 4, 5, 6, 8, 9, 10, and 12. It was also negative with Evandro Chagas Institute stock hyperimmune ascitic fluids or sera to the following viruses: Tacaiuma, Turlock Utinga, Tembe, GD VII, Mirim, Acara, Oropouche, Irituia, Timbo, Chaco, Marco, Lukuni, Pacui, Jurona, Agua Preta, rabies, Ieri, Melao, Araguari, Serra do Navio, Boracea, Cotia, Gamboa, Belem, BeAn 157575, Piry, Cocal, Bertioga, Kwatta, Amapari, Herpes simplex, EMC, Nariva, Moriche, Cayenne 241, Cayenne 404, Cayenne 564, Navarro, SPAn 2220, Bat salivary gland, MRM 1, and MRM 2, Inhangapi, Santarem, BeAn 228950, and mouse hepatitis. It showed a slight reaction with polyvalents 7 and Bwamba, and with ascitic fluids to Hart Park and Kamese viruses, which are included in these two pools respectively. The results below show the relationships between Mosqueiro, Hart Park, and Kamese viruses by the CF test. They also show that Mosqueiro virus is very closely related, if not identical, to CoAr 1279, a Colombian isolate:

| | Sera | | | | |
|---|---|---|---|---|---|
| **Antigens** | **Mosqueiro** | **Hart Park** | **Kamese** | **CoAr 1279** | **Control** |
| Mosqueiro | > 128/40 * | 8/4 | 4/4 | 2/40 | 0 |
| Hart Park | 0 | > 256/40 | 0 | | 0 |
| Kamese | 0 | | > 128/> 256 | | 0 |
| CoAr 1279 | >128/40 | 8/4 | 4/4 | 2/40 | 0 |
| Control | 0 | 0 | 0 | 0 | 0 |

* Antibody titer/antigen titer; 0 = <4

Blank = not done

## Section VI - Biologic Characteristics

Virus Source (all VERTEBRATE isolates)

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) | |
| Vero (CL) | SM 14 | 11 | 4+ | 4.0** | | | | | |
| Chick embryo (PC) | | | | | | No plaques | | | |
| BHK-21 (CL) | | 2 | No CPE | 4.6 (3) | | | | + | |
| CER (CL) | | 2 | No CPE | 3.5 (3) | | | | + | |
| E6 (CL) | | 4 | + - CPE | 5.5 (3) | | | | + | |
| C6/36 (CL) | | 3 | No CPE | 4.8 (3) | | | | | |
| Vero (CL) | | | | | 6 | Plaques (3) | | | |

** 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 |
|---|---|---|---|
| Culex portesi | 1 | | APEG, IPEAN, Belem, Para, Brazil |
| Wyeomyia spp. | 1 | | |
| Mansonia (Man) sp. | 1 | | Alenquer, Para, Brazil |
| Proechimys guyannensis | | 0/41 NT | APEG, IPEAN, Belem, Para, Brazil |
| Oryzomys sp. | | 0/9 NT | |
| Oecomys sp. | | 0/1 NT | |
| Caluromys philander | | 0/14 NT | |
| Marmosa | | 0/4 NT | |
| Didelphis m. marsupialis | | 0/4 NT | |
| Philander o. opossum | | 0/1 NT | |
| Metachirus nudicaudatus | | 0/1 NT | |
| Bats | | 0/5 NT | |
| Monkeys | | 0/6 NT | |
| Edentates | | 0/3 NT | |
| Sentinel chickens | | 0/45 NT | |
| Monkeys | | 0/8 NT | Xingu, Para, Brazil |
| Edentates | | 0/2 NT | Moju, Para, Brazil |
| Edentates | | 0/1 NT | Marajo island, Para, Brazil |
| Wild birds | | 0/47 NT | Ananindeua, Para, Brazil |

No isolations from 43,664 pools of arthropods (mosquitoes, ticks, sandflies, culicoides) processed from 1966 to 1976.

## 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) | SM 12 | ic | Death | 4.7 | 7.5 |
| Mice (nb) | | ip | Irregular deaths | | |
| Mice (nb) | SM 6 | sc | Survived | | |
| Mice (wn) | SM 12 | ic | Antibody | | |
| Mice (wn) | | ip | Antibody | | |
| hamster (23 day) | SM 6 | ic | Antibody | | |
| hamster (23 day) | | ip | Antibody | | |

## 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 |

## 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)
**Brazil**

Suspected (Antibody only detected)

## Section XIII - References

1. Davies, J.B. et al. 1971. Bull. Ent. Res. 61:125-132.
2. Araujo, R. et al. Personal communication.
3. Kerschner,, J. Personal communication. 1983.

## Remarks