| Virus Name: Thottapalayam | Abbreviation: TPMV |
|---|---|

Status
**Possible 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
**VRC 66412**

Accession Number

Original Date Submitted
11/8/1984

Family
**Not listed**

Genus
**Not listed**

Information From
**Arbovirus Res. Off., Microbiol. Dept.**

Address
**Christian Med. Coll. (CMC) Hosp., Vellore-4, N. Arcot, Tamil Nadu, India**

Information Footnote
**Reviewed by editor**

## Section II - Original Source

Isolated By (name)
**D.E. Carey (1)**

Isolated at Institute
**Virus Research Centre, Poona-CMC**

Host Genus
**Suncus murinus (shrew)**

Species

Host Age/Stage
**Adult**

Sex
**Not Answered**

| Isolated From | Isolation Details |
|---|---|
| **Organs/Tissues** | **Spleen** |

Signs and Symptoms of Illness

Arthropod

Time Held Alive before Inoculation

Collection Method
**Trapped**

Collection Date
**7/23/1964**

Place Collected (Minimum of City, State, Country)
**Thottapalayam, Vellore Tk., N. Arcot, India**

Latitude
**12° 55' N**

Longitude
**79° 8' E**

Macrohabitat

Microhabitat

Method of Storage until Inoculated
**Whole spleen stored at -50dC**

Footnotes

## Section III - Method of Isolation

Inoculation Date
**1/1/1965**

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

Route Inoculated
**Intracerebral**

Reisolation
**Yes**

Other Reasons
**This is the only isolation of this agent, and to our knowledge the first of a previously undescribed virus.**

Homologous Antibody Formation by Source Animal
**Not tested**

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>**1.0%** | After Treatment Titer<br>**<2.2 dex** | Control Titer<br>**4.1 dex** |

Other (formalin, radiation)

**Virion Morphology**

| | | |
|---|---|---|
| Shape<br>**Bunyavirus-like (4)** | Dimensions<br>**95-185 nm** | |
| Mean<br>**120 nm**nm | Range<br>nm | |
| Measurement Method<br>**EM (4)** | Surface Projections/Envelope<br>**Numberous tailed particles; 30 nm diam., > 400 nm length (4)** | 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) |
|---|---|---|
| **No** | **SMB ext. by sucrose-acetone with or without protamine tr.** | **Goose** |
| pH Range<br>**6.0-6.8** | pH Optimum | |
| Temperature Range<br>**22dC** | Temperature Optimum | |

Remarks

Serologic Methods Recommended
**CF**

Footnotes

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

In complement-fixation tests performed in Vellore, non-reactive with hyperimmune mouse sera to Sindbis and chikungunya (Group A arboviruses), dengue (Group B arbovirus), Umbre (Turlock), Chittoor (Bunyamwera), Sathuperi (Simbu), and other as yet unidentified or ungrouped viruses isolated previously in Vellore and believed to be arboviruses.
In complement-fixation tests carried out in the laboratories of the Yale Arbovirus Research Unit, New Haven, non-reactive with grouping hyperimmune mouse ascitic fluids of arbovirus Groups A, B, C, Guama, Bunyamwera, Simbu, California, Anopheles A, Anopheles B, Turlock, Capim, Tacaribe, VSV, Quaranfil, Kaisodi and Qalyub. In addition, hyperimmune mouse ascitic fluid of Thottapalayam was non-reactive when tested with antigens prepared from nearly 150 viruses isolated in different parts of the world.
Thottapalyam virus shows an antigenic relationship to hantaviruses [4] .

Pending verification of the relationship, this virus is being placed in the family Bunyaviridae as an ungrouped virus.

## 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) | |
| PS (CL) | | | No CPE | | | No plaques | | + (3) | |

## 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 |
|---|---|---|---|
| Suncus murinus | 1/58 | | Vellore, Tamil Nadu, India |

## 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 11 | ic | 100% mortality | | |
| Mice (nb) | | ip | 100% mortality | | |
| Mice (nb) | | sc | | | |
| Mice (wn) | SM 6 | ic | No sickness | | |
| Mice (wn) | | ip | | | |
| Mice (5-6 wk) | SM 10 | ic | None | | |
| Mice (nb) | SM 11 | ic | Death | | >7.0 |

## 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)
**India**

Suspected (Antibody only detected)

## Section XIII - References


1. Carey, D.E., et al. 1971. Indian J. Med. Res. 59:1758-1760.
2. Carey, D.E., et al. 1968. Indian J. Med. Res. 56:1340-1352.
3. Cogate, S.S. 1976. Ind. J. Med. Res. 64:83-86.
4. Zeller, H. et al. 1989. II. Arch. Virol. Submitted.


## Remarks