| Virus Name: Kern Canyon | Abbreviation: KCV |
|---|---|

Status
**Probably not Arbovirus**

Select Agent
**No**

SALS Level
**2**

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

Other Information

Antigenic Group
**Mossuril**

## SECTION I - Full Virus Name and Prototype Number

Prototype Strain Number / Designation
**M 206**

Accession Number

Original Date Submitted
2/5/1985

Family
**Rhabdoviridae**

Genus
**Not listed**

Information From
**Harald N. Johnson**

Address
**California State Health Department, Viral and Rickettsial Disease Laboratory**

Information Footnote
**Reviewed by editor**

## Section II - Original Source

Isolated By (name)
**Harald N. Johnson (1)**

Isolated at Institute
**Berkeley, California**

Host Genus
**Myotis yumanensis**

Species

Host Age/Stage
**Adult**

Sex
**Female**

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

Signs and Symptoms of Illness
**None**

Arthropod

Time Held Alive before Inoculation

Collection Method
**Hand net**

Collection Date
**6/9/1956**

Place Collected (Minimum of City, State, Country)
**Kern County, California, USA**

Latitude
**35° N**

Longitude
**119° W**

Macrohabitat
**Kern River Canyon, Sierra Nevada Mts.; semi-arid foothill region**

Microhabitat
**Bat roost in roof of Borel Power Station**

Method of Storage until Inoculated
**stor Sealed glass tube stored in dry ice chest**

Footnotes

## Section III - Method of Isolation

Inoculation Date
**2/1/1960**

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
**RNA**

| | | |
|---|---|---|
| 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) | After Treatment Titer | Control Titer |

Other (formalin, radiation)

**Virion Morphology**

Shape
**Bullet-shaped virus (5)**

Dimensions
**73 x 132 nm**

Mean
nm

Range
nm

| | | |
|---|---|---|
| Measurement Method<br>**Electron microscopy (5)** | 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<br>**No** | Antigen Source | Erythrocytes (species used) |
| 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

Kern Canyon virus antigen:

Failed to react in the CF test with the following mouse hyperimmune sera: Anopheles B, Tacaiuma, Ganjam, Irituia, Acara, Pacui, Candiru, Piry, Palyam, Mossuril, Tete, Witwatersrand, Navarro, Wongal, Lebombo, Mapputta, Wad Medani, Nyamanini, Wanorwrie, Tacaribe, Lukuni, Jurona, Nyando, Quaranfil, Chenuda, Oropouche, SF Sicilian, SF Naples, Hart Park, EHD-NJ, SE65, VSNJ, VSI, Bwamba (SE493), Anopheles A, K622, Tsuruse, Mag 118, gr. Buny., 2325, gr. Simbu, Calif., Capim, Lunyo [2] .
Kern Canyon hyperimmune serum:

Failed to react in the HI test with the following HI antigens: SF Sicilian, SF Naples, Sindbis, WEE, Akabane, Guaroa, Turlock, Tahyna, Bunyamwera, Tacaiuma, Manzanilla, Icoaraci, Chagres, Ketapang, Pixuna, Germiston, Witwatersrand, Maguari, Sathuperi, Guama, Murutucu, Oriboca, Ndumu, Ilesha, EEE [2] .
Cross immunity tests:

Not related to rabies, Western equine, St. Louis, Colorado tick fever, Modoc, Rio Bravo, California or Cache Valley viruses [1] .

Kern Canyon virus was placed in the Mossuril serogroup as a result of its relationship to Charleville virus. The latter virus seemed to be the ""link virus"" in relating other rhabdoviruses to the original members of the Mossuril serogroup [9] .
Kern Canyon virus is related by IFA, CF and EIA to Barur and Nkolbisson viruses and the unregistered Fukuoka virus, these viruses form the Kern Canyon antigenic group [10] .

## Section VI - Biologic Characteristics

Virus Source (all VERTEBRATE isolates)
**Blood (LV)**

Lab Methods of Virus Recovery (ALL ISOLATIONS)
**Newborn mice and 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) | |
| Vero (CL) | P-3 | | | | 3 | 4 mm | 5.0*(4) | | |
| LLC-MK2 (CL) | | | | | 3 | 1 mm | 4.2 | | |
| BHK-21 (CL) | | 2 | CPE | 5.3* (8) | | | | | |
| Vero (CL) | | 3 | CPE | 5.7 (8) | | | | | |
| E6 (CL) | | 3 | CPE | 6.5 (8) | | | | | |
| CER (CL) | | 2 | CPE | 4.0 (8) | | | | | |
| C6/36 (CL) | | | No CPE | | | | | - (8) | |
| PS (CL) | | | No CPE | | | | | - (8) | |
| Ae dorsalis (CL) | | | Multiplication | | | | | + (7) | |

Virus can be cultivated in HeLa, FL, human diploid, monkey kidney, hamster kidney, calf kidney and chick embryo tissue culture. No CPE observed.

* 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 |
|---|---|---|---|
| Myotis yumanensis (bat) | 1/15 | | Kern County, California; 1956(3) |
| Myotis yumanensis (bat) | 1/26 | | Kern County, California; 1961(1, 3) |

## 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) | SMB 3 | ic 0.015 | Illness and death | 3-4 | 8 |
| Mice (nb) | SMB 5 | ip 0.015 | Illness and death | 6-10 | 5 |
| Mice (nb) | | sc | | | |
| Mice (wn) | SMB 3 | ic 0.015 | Illness and death | 8-10 | 6 |
| Mice (wn) | | ip | | | |
| Mice (wn) | SMB 2 | im | Immunity | | |
| chick embryo (6 days) | | ys 0.1 | Viral multiplication | | |

## 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 |
| Virus did not multiply in Culex tarsalis mosquitoes (3). | | | | | | | | | |

## 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)
**California, USA**

Suspected (Antibody only detected)

## Section XIII - References


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## Remarks