

Virus Name: Japanaut

Abbreviation: JAPV

Status: Probable Arbovirus
SALS Level: 2
Antigenic Group: Ungrouped
Taxonomic status: *Orbivirus*
Other Information: None.

Select Agent:
SALS Basis: S

HEPA Filtration:

Section I - Full Virus Name and Prototype Number

Full Virus Name: Japanaut
Prototype Number: MK 6357
Information from: Ian D. Marshall
*
Date: 10/29/1984
Address: Dept. of Microbiology, JCSMR, Aust. Nat. Univ., Canberra, Australia
*
Reviewed by editor

Section II - Original Source

Isolated by: I.D. Marshall and G.M. Woodroofe
at: Canberra
Genus and species: Mixed Culicine mosquitoes (presumably on bait)
Age/Stage: Adult
Sex: Sentinel X

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

Signs and symptoms of illness:
Arthropod engorged X **depleted** **gravid**
Time held alive before inoculation:
Collection date: 11/26/1965 **Method:** "Trinidad 10" trap baited with 6 laboratory mice
Place collected: Near Japanaut Village, Sepik River, New Guinea
Latitude: 4° 6' " S **Longitude:** 143° 5' " E
Macrohabitat: Levee bank and flood plain C.200' above sea level
Microhabitat: Forest with many small streams and pig wallows. Trap C.6' above ground
Method of storage until inoculated: Liquid nitrogen and Revco at -70dC
Footnotes:

Section III - Method of Isolation and Validity

Inoculation Date: 2/14/1969
Animal: nb mice **Embryonated egg:** **Tissue Culture:** X
(Details in Section VI - Biologic Char.)
Route inoculated: ic and sc **Reisolation:** No
Other reasons: Antigenically unrelated to other viruses in this school.
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 Inactivated at pH 3.0 at 4C/3 hours (1)

Lipid solvent:

| | | |
|--------------|-----------------------|---------------|
| (ether) | After treatment titer | Control titer |
| (chloroform) | After treatment titer | Control titer |

Detergent:
(deoxycholate) 1:200 After treatment titer 4.3 dex Control titer 4.3 dex
Other (formalin, radiation):

Virion morphology:

Shape Spherical; orbivirus-like Dimensions About 80 nm diameter
Mean (nm) range (nm) how measured Thin-section electron microscopy (2)
Surface projections, envelope
Nucleocapsid dimensions, symmetry Densely staining core - 30 nm

Morphogenesis:

Site of constituent formation in cell
Site of virion assembly Budding not observed
Inclusion bodies
Other

Hemagglutination:

Hemagglutination No Antigen source SMB ext. by sucrose-acetone
Erythrocytes Gander pH range pH optimum
Temperature optimum range
Remarks
Serologic methods recommended CF
Footnotes:

Section V - Antigenic Relationship And Lack of Relationship To Other Viruses

No cross reaction by CF with any arbovirus in Canberra laboratories. Characterization completed by Yale Arbovirus Research Unit.

1. Trace reaction in CF with Japanaut (MK 6357) antigen and pooled ascitic fluid containing Palyam, Eubenangee and Corriparta antibodies.
2. No relationship by CF to 197 arbovirus antigens, including the following

Orbiviruses:

| | |
|---------------------|--------------------------|
| Acado | IbAr 22619 |
| Bluetongue | Irituia |
| Changuinola | Kemerovo |
| Chenuda | Lemombo |
| Colorado tick fever | Mitchell River (MRM 104) |
| Corriparta | Mono Lake |
| DakArB 1327 | Orungo |
| EHD | Tribec |
| Eubenangee | Wad Medani |
| | Warrego (CH 9935) |

Homologous titre = 64. Tests at 1:4 dilution of ascitic fluids.

Section VI - Biologic Characteristics

Virus source (all VERTEBRATE isolates): Blood (LV)

Lab Methods of Virus Recovery (ALL ISOLATIONS): Newborn mice and chick embryo 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) | | |
| Chick embryo (PC) | | | | | | Plaques | | | |

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 |
|---|---------------------------|---|-------------------------------|
| Pool of mixed Culicine mosquitoes | 1 * | | Sepik District, New Guinea |
| Syconycteris crassa (bat) | 1/6 | | |

* 6 other apparent isolates (2 from mosquitoes and 4 from blood of bat, snake and birds) were recovered in the laboratory at about the same time, but failure to reisolate from any source renders validity doubtful. First isolate was from blood of Syconycteris crassa.

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) | SMB 5 | ic 0.02 | Death | 4-9 | 8.0 |
| Mice (nb) | | ip 0.03 | Occasional deaths | >18 | <3.0 |
| Mice (nb) | | sc | | | |
| Mice (wn) | | ic 0.03 | Antibodies only | | |
| Mice (wn) | | ip 0.03 | Antibodies only | | |

Section IX - Experimental Arthropod Infection And Transmission

| Arthropod species & virus source(a) | Method of Infection log10/ml (b) | | Incubation period (c) | | Transmission by bite (d) | | Assay of arthropod, log10/ml (e) | | |
|-------------------------------------|---|----------|-----------------------|----|--------------------------|-------|----------------------------------|-------|--------|
| | Feeding | Injected | Days | °C | Host | Ratio | Whole | Organ | System |
| Aedes aegypti | Adult mosquitoes infected by intrathoracic inoculation (virus titer = <1.3 log10/mosq.). At day 8, 2/3 mosquitoes tested were infected; virus titer = 1.7 log10/mosq. At day 14, 3/3 mosquitoes were infected. Virus titer ranged from 1.7-2.6 log10/mosq. At day 21, 1/3 was infected (2.8 log10/mosq.). There was no transmission by bite on days 8 and 14. | | | | | | | | |

Section X - Histopathology

Character of lesions:

Inclusion bodies:

Cytoplasmic:(M) (LV) Intranuclear: (M) (LV)

Organs-tissues affected:

Category of tropism:

Section XI - Human Disease

Human disease: In nature: (S) (R)

Death: (S) (R)

Residua: (S) (R)

Laboratory infections: Subclinical: (S) (R)

Overt Disease: (S) (R)

Clinical manifestations:

Category: No. of cases:

Section XII - Geographic Distribution

Known (virus):

Sepik District, New Guinea

Section XIII - References

1. Marshall, I.D. Personal communication. 1973.
2. Lipman, M., YARU. Personal communication.

Section XIV - Remarks
