

|                                                                                                                                                                        |                           |                           |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|---------------------------|
| <b>Virus Name: Naranjal</b>                                                                                                                                            |                           | <b>Abbreviation: NJLV</b> |
| Status<br><b>Probable Arbovirus</b>                                                                                                                                    | Select Agent<br><b>No</b> | SALS Level<br><b>3</b>    |
| SALS Basis<br><b>Insufficient experience with virus; i.e., experience factor from SALS surveys was less than 500 in laboratory facilities with low biocontainment.</b> |                           |                           |
| Other Information                                                                                                                                                      |                           |                           |
| Antigenic Group<br><b>B</b>                                                                                                                                            |                           |                           |

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

|                                                       |                                                                                                       |                                             |
|-------------------------------------------------------|-------------------------------------------------------------------------------------------------------|---------------------------------------------|
| Prototype Strain Number / Designation<br><b>25008</b> | Accession Number                                                                                      | Original Date Submitted<br><b>9/24/1984</b> |
| Family<br><b>Flavivirus</b>                           | Genus                                                                                                 |                                             |
| Information From<br><b>C.H. Calisher</b>              | Address<br><b>Division of Vector-Borne Viral Diseases, CDC, P.O. Box 2087, Fort Collins, CO 80522</b> |                                             |
| Information Footnote<br><b>Reviewed by editor</b>     |                                                                                                       |                                             |

**Section II - Original Source**

|                                                                      |                                                                           |                                                                         |
|----------------------------------------------------------------------|---------------------------------------------------------------------------|-------------------------------------------------------------------------|
| Isolated By (name)<br><b>E. Gutierrez V.</b>                         | Isolated at Institute<br><b>Inst. Nac. De Higiene, Guayaquil, Ecuador</b> |                                                                         |
| Host Genus<br><b>hamster</b>                                         | Species                                                                   | Host Age/Stage                                                          |
| Sex<br><b>Not Answered</b>                                           |                                                                           |                                                                         |
| <u>Isolated From</u>                                                 | <u>Isolation Details</u>                                                  |                                                                         |
| <b>Organs/Tissues</b>                                                | <b>heart, skeletal muscle</b>                                             |                                                                         |
| Signs and Symptoms of Illness<br><b>sick</b>                         | Arthropod                                                                 |                                                                         |
| Time Held Alive before Inoculation                                   |                                                                           |                                                                         |
| Collection Method                                                    | Collection Date<br><b>9/20/1976</b>                                       |                                                                         |
| Place Collected (Minimum of City, State, Country)<br><b>Naranjal</b> |                                                                           |                                                                         |
| Latitude<br><b>2° 40' S</b>                                          | Longitude<br><b>79° 35' W</b>                                             |                                                                         |
| Macrohabitat                                                         | Microhabitat                                                              | Method of Storage until Inoculated<br><b>mechanical freezer (-70dC)</b> |
| Footnotes                                                            |                                                                           |                                                                         |



**Morphogenesis**

Site of Constituent Formation in Cell      Site of Virion Assembly      Site of Virion Accumulation

Inclusion Bodies      Other

**Hemagglutination**

Hemagglutination      Antigen Source      Erythrocytes (species used)  
**Yes**      **SMB ext. by sucrose-acetone**      **goose**

pH Range      pH Optimum  
**5.75-7.0**      **6.1**

Temperature Range      Temperature Optimum  
**4dC and 23dC**      **4dC**

Remarks

Serologic Methods Recommended  
**HI, CF, serum dilution plaque reduction neutraliza**

Footnotes

**Section V - Antigenic Relationship and Lack of Relationship to Other Viruses****Results of hemagglutination-inhibition test with strain 25008 and other flaviviruses.**

| Virus <sup>a</sup> | Strain    | Titer of Antibody to:     |     |     |      |     |      |         |      |
|--------------------|-----------|---------------------------|-----|-----|------|-----|------|---------|------|
|                    |           | 25008                     | BSQ | SLE | TOC  | YF  | ARoA | ILH     | JUT  |
|                    | 25008     | 160                       | 40  | 160 | 80   | 40  | 10   | 640     | 20   |
| BSQ                | BeAn 4073 | 80                        | 80  | c)  | 80   | 20  | 10   | 640     | 10   |
| SLE                | TBH-28    | <sub>-</sub> <sup>b</sup> | -   | 160 | 40   | 10  | 10   | 160     | -    |
| ROC                | SPH-34675 | 10                        | -   |     | 640  | -   | -    | 160     | -    |
| YF                 | 17D       | 20                        | 10  |     | 80   | 160 | 10   | 320     | 10   |
| AROA               | VENA 1809 | 320                       | 80  |     | 320  | 40  | 320  | 2560    | 40   |
| ILH                | Original  | 80                        | 40  |     | 1280 | 80  | 40   | >=10240 | 80   |
| JUT                | JG-128    | 10                        | 10  |     | 20   | 10  | 10   | 80      | 2560 |

**Results of complement-fixation (CF) and serum dilution plaque-reduction neutralization tests with strain 25008 and other flaviviruses.**

Titer of Antibody to:

| Virus <sup>a</sup> | Strain    | 25008 |     | BSQ    |                | SLE    |     | ROC    |      | YF  |     | AROA   | ILH    |     | JUT    | TB |
|--------------------|-----------|-------|-----|--------|----------------|--------|-----|--------|------|-----|-----|--------|--------|-----|--------|----|
|                    |           | CF    | NT  | CF     | NT             | CF     | NT  | CF     | NT   | CF  | NT  | CF     | CF     | NT  | CF     | CF |
|                    | 25008     | 256   | 640 | 256    | - <sup>b</sup> | -      | -   | 32     | -    | -   | -   | 8      | 16     | -   | 8      | -  |
| BSQ                | BeAn 4073 | 64    | 160 | >=1024 | >=2560         | 16     |     | 64     |      | -   |     | 256    | 64     |     | 8      | 8  |
| SLE                | TBH-28    | 16    | 40  | -      | <sup>c</sup>   | >=1024 | 160 | 256    |      | -   |     | 64     | 128    |     | 8      | -  |
| ROC                | SPH-34675 | 32    | -   | -      |                | 64     |     | >=1024 | 1280 | -   |     | 64     | 512    |     | 8      | -  |
| YF                 | 17D       | 8     | -   | -      |                | -      |     | 64     |      | 256 | 160 | 8      | 64     |     | 8      | 8  |
| AROA               | VENA 1809 | 16    | -   | -      |                | 16     |     | 64     |      | -   |     | >=1024 | 64     |     | 8      | -  |
| ILH                | Original  | 16    | -   | -      |                | 64     |     | 512    |      | -   |     | 32     | >=1024 | 640 | 8      | -  |
| JUT                | JG-128    | 8     | -   | -      |                | -      |     | 32     |      | -   |     | 8      | -      |     | >=1024 | -  |
| TB                 | Tr-127154 | -     |     | 8      |                | -      |     | -      |      | -   |     | 8      | -      |     | -      | 51 |

<sup>a</sup> BSQ=Bussuquara, SLE=St. Louis encephalitis, ROC=Rocio, YF=yellow fever, AROA=Aroa, ILH=Ilheus, JUT=Jutiapa, TB=Tamana Ba

<sup>b</sup> - signifies <10 HI and N; <8 CF

<sup>c</sup> Blank indicates not tested

**Section VI - Biologic Characteristics**

Virus Source (all VERTEBRATE isolates)  
heart, liver, spleen, kidney (LV)

Lab Methods of Virus Recovery (ALL ISOLATIONS)  
newborn mice

| Cell system<br>(a)  | Virus passage<br>history (b) | Evidence of Infection |               |                       |            |             |                     |                                  |
|---------------------|------------------------------|-----------------------|---------------|-----------------------|------------|-------------|---------------------|----------------------------------|
|                     |                              | CPE                   |               |                       | PLAQUES    |             |                     | Growth<br>Without CPE<br>+/- (g) |
|                     |                              | Day<br>(c)            | Extent<br>(d) | Titer<br>TCD50/ml (e) | Day<br>(c) | Size<br>(f) | Titer<br>PFU/ml (e) |                                  |
| duck embryo<br>(PC) | SM2V1                        | 6                     | 4+            |                       | 8          | 1 mm        | 7.7*                |                                  |
| Vero (CL)           |                              | 5                     | 4+            |                       | 6          | 4 mm        | 8.1                 |                                  |
| LLC-MK2<br>(CL)     |                              | 6                     | 4+            |                       | 7          | 4 mm        | 7.3                 |                                  |
| PS (CL)             |                              | 6                     | 4+            |                       | 7          | 2 mm        | 4.9                 |                                  |

\* Expressed in dex

**Section VII - Natural Host Range (Additional text can be added below table)**

| Vertebrate (species and organ) and<br>arthropod | No. isolations/No.<br>tested | No. with antibody/No. tested Test<br>used | Country and<br>region |
|-------------------------------------------------|------------------------------|-------------------------------------------|-----------------------|
| sentinel hamsters *                             | 2                            |                                           | Ecuador, 1976         |
| Cx (Mel) adamesi                                | 3                            |                                           |                       |
| Cx (Mel) species                                | 1                            |                                           |                       |

\* Separate isolates from heart, skeletal muscle



**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)             |
| Suspected (Antibody only detected) |

**Section XIII - References**

|                                                                   |
|-------------------------------------------------------------------|
| 1. Calisher, C.H. et al. 1983. Am. J. Trop. Med. Hyg. 32:877-885. |
|-------------------------------------------------------------------|

**Remarks**

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