

Status: Possible Arbovirus

Select Agent:

SALS Level: 2

SALS Basis: S

Antigenic Group: Le Dantec

HEPA Filtration:

Taxonomic status: Not listed

Other Information: None.

Section I - Full Virus Name and Prototype Number**Full Virus Name:** Keuraliba**Prototype Number:** DakAnD 5314**Information from:** Arbovirus Reference Centre**Date:**

* 11/17/1984

Address: Institut Pasteur, BP 220, Dakar, Senegal

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Reviewed by editor

Section II - Original Source**Isolated by:** Institut Pasteur at Dakar, Senegal**at:** Tatera kempi**Genus and species:****Sentinel X****Age/Stage:** Sex: F

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

Signs and symptoms of illness:

Arthropod engorged depleted gravid

Time held alive before inoculation:**Collection date:** 4/24/1968 **Method:** Trapped**Place collected:** Saboya, Senegal**Latitude:** 13° 36' " N **Longitude:** 16° 25' " W**Macrohabitat:** Farmed areas in sparse forest around mangrove gallery, at sea level; tropical**Microhabitat:** Millet and peanuts plantation**Method of storage until inoculated:** Revco at -75dC**Footnotes:****Section III - Method of Isolation and Validity****Inoculation Date:** 5/21/1968**Animal:** nb mice **Embryonated egg:** **Tissue Culture:**

(Details in Section VI - Biologic Char.)

Route inoculated: **Reisolation:** Yes**Other reasons:** First virus of this type in laboratory**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

Lipid solvent:
(ether) After treatment titer Control titer
(chloroform) After treatment titer 2.9 dex Control titer 6.6 dex
Detergent:
(deoxycholate) After treatment titer Control titer
Other (formalin, radiation):

Virion morphology:

Shape Rhabdovirus morphology (3) Dimensions 65 x 195 nm
Mean (nm) range (nm) how measured By electron microscopy (3)
Surface projections, envelope
Nucleocapsid dimensions, symmetry

Morphogenesis:

Site of constituent formation in cell
Site of virion assembly
Inclusion bodies
Other

Hemagglutination:

Hemagglutination No Antigen source SMB ext. by sucrose-acetone
Erthrocytes Goose pH range 5.7-6.6 pH optimum
Temperature optimum range Room temperature
Remarks
Serologic methods recommended CF
Footnotes:

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

CF test: Homologous titer = 256/64. (Institut Pasteur Dakar).

D 5314 did not react with the following viruses:

| | |
|---------------|--|
| Group A: | Semliki Forest virus, chikungunya, o'nyong-nyong, Begoa (DakHB 543), DakArY 251, Middleburg, Sindbis, Ndumu. |
| Group B: | Ntaya, Bagaza (DakArB 209), Wesselsbron, DakArY 310, Usutu, DakArY 276, West Nile, Koutango, Dakar bat, Uganda S. Saboya, Banzi, Boubou, yellow fever, Zika, Spondweni, Bukalasa bat, (DakAnD 595), Royal Farm, Kadam (UgAr 6640). |
| Bunyamwera; | Bunyamwera, Germiston, Ilesha, Shokwe, Birao (DakArB 2198). |
| Simbu; | Simbu, Ingwavuma, DakAnB 331, DakArB 994, DakArB 1351. |
| Bwamba; | Bwamba, Pongola. |
| California; | Lumbo. |
| Olifantsvlei; | Olifantsvlei, Bobia (DakArB 1569). |
| Turlock; | Yaba 1, M'Poko (DakArB 365). |
| Nyando; | Nyando, Eret 147, DakArY 176. |
| Mossuril; | Mossuril. |
| Matariya; | DakAnB 423. |
| Eubenangee; | Pata (DakArB 1327). |
| Phlebotomus; | Nafada (DakAnD 3150). |
| NSD; | Dugbe, DakAnB 373. |
| Kemerovo; | Chenuda, Wad Medani. |
| Qalyub; | Bandia. |
| Quaranfil; | Quaranfil. |
| Others; | Witwatersrand, Okola, Nkolbisson, Tataguine, Lebombo, Tanga, Nyamanini, Thogoto, Jos (DakArD 91), Bhanja (DakArD 9540), Gossas, Le Dantec, Somone (DakArD 4499), Toure, Yogue, Hann (DakArD 8194), Botambi, Boteke, Zinga (DakArB 1976), Bangoran (DakArB 2053), Sokoumba (DakArB 2078), Yata (DakArB 2181), DakHB 754, DakAnB 769, DakArB 2712, DakArB 2846, DakArB 2882, DakArY 7. |
| Nonarbovirus; | Herpesvirus (DakHB 3667). |

In addition, D 5314 antigen failed to react with the following immune fluids:

| | |
|---------------------------|--|
| Group B; | Entebbe bat, Montana Myotis leukoencephalitis, dengue 1, 2, 3, 4, TH Sman, TH-36. |
| Simbu; | Shamonda, Sango, Sabo, Shuni, Sathuperi, Yaba 7, IbAn 28558. |
| California; | Group serum. |
| Tete; | Tete, Matruh. |
| EHD-NJ; | IbAr 22619. |
| Matariya; | Matariya, Burg el Arab. |
| Corriparta; | Acado. |
| VSV; | Chandipura (IbAn 9978). |
| Phlebotomus; | Group serum, Arumowot (IbAn 15736). |
| Kaisodi-Qalyub-Quaranfil; | Group serum (Johnston Atoll, Kaisodi, Bandia, Silverwater, Quaranfil, Lanjan, Qalyub). |
| Uukuniemi; | Grand Arbaud, Ponteves, EgAn 1825. |
| Congo; | Congo. |
| Bluetongue; | Type 7 (IbAn 22703), Type 10 (IbAr 22618). |
| Others; | SudAr 1275/64, Abadina (IbAr 22388), Oyo (IbAn 2898), IbAn 17143, Lagos bat, Mount Elgon bat, IbAn 33709, IbAn 38946, SAAN 4511. |
| Nonarboviruses; | LCM-rabies, Mokola, and IbH 2977 (related to rabies), IbAn 20433 (NDV), IbAr 23380 (kotonkan). |

Yale Arbovirus Research Unit (New Haven). HI test. D 5314 antiserum did not react with the following antigens; Oriboca, Itaqui, Marituba, Murutucu, Nepuyo, Gumbo Limbo, Apeu, Caraparu, Pixuna, Aura, Mucambo, EEE, WEE, VEE, Mayaro, Arumowot (IbAn 15736), Naples, Anhangá, Sororoca, Tacaiuma, Pacora, Turlock, Umbre, Utinga, Wongal, Zegla, Sango, (Maru-11709), SLE, Powassan, California, Karimabad, Icoaraci, Sicilian, Tahnya, Guaroa, Taissui, Maguari, Anopheles A, Anopheles B, Bakau, Benfica, Buttonwillow, Guajara, Kairi, Ketapang, Manzanilla, Patois, Itaporanga, Candiru, Chagres, Bujaru.

Subsequently, Le Dantec virus was shown to be antigenically related to Keuraliba virus by CF tests although both viruses were distinct [4] . Previously, Keuraliba virus was antigenically placed in the VSV serogroup, but this relationship is now in question. It is recommended that Keuraliba virus be removed from the VSV serogroup; therefore, Keuraliba and Le Dantec viruses will now comprise the Le Dantec serogroup.

Section VI - Biologic Characteristics

Virus source (all VERTEBRATE isolates): Blood (LV), liver (LV), kidney (LV), spleen (LV)

Lab Methods of Virus Recovery (ALL ISOLATIONS): Newborn mice

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) | | | |
| Xenopus laevis (CL) | | | CPE (3) | | | | | | | |
| Vero (CL) | | | No CPE (3) | | | | | | | |
| BHK-21 (CL) | | | No CPE (3) | | | | | | | |

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 |
|--|---------------------------|--|--------------------|
| Tatera kempfi (gerbil) | 5/288 | | Saboya, Senegal |
| Mastomys sp. (rodent) | 1/295 | | |
| Taterillus sp. (gerbil) | 1/61 | | |
| Man | | 0/44 CF | |

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 log ₁₀ /ml | | |
|---------------------------|----------------------------|------------------------|------------------------|------------|-----------------------------|--|--|
| Mice (nb) | SMB 3 | ic 0.02 | Death | 3 | 8.3 | | |
| Mice (nb) | | ip 0.02 | None | | | | |
| Mice (nb) | | sc | | | | | |
| Mice (wn) | | ic 0.03 | Irregular deaths | 9-10 | | | |
| Mice (wn) | | ip 0.1 | Production of antibody | | | | |
| rabbit (2 mo) | | iv 0.5 | Production of antibody | | | | |

Section IX - Experimental Arthropod Infection And Transmission

Section X - Histopathology

Character of lesions: Inoculated suckling mice: Very important lesions of encephalitis with focal destruction and necrosis of neurons. Mild myelitis; no myositis; no visceral lesions.

Inclusion bodies:

Cytoplasmic:(M)

(LV)

Intranuclear: (M)

(LV)

Organs-tissues affected: Brain (LV)

Category of tropism: Neurotropic

Section XI - Human Disease

a: (S) (R) (S) (R)

Laboratory infections: Subclinical: (S) (R)

Overt Disease: (S) (R)

Clinical manifestations:

Category:

Section XII - Geographic Distribution

Known (virus):

Senegal

Section XIII - References

Section XIV - Remarks

1. Rapport annuel du Centre Regional de Reference pour les Arbovirus, Institut Pasteur de Dakar, 1968. 2. Director, YARU. Personal communication. 1968. 3. El Mekki, A., et al. 1981. Trans. Roy. Soc. Trop. Med. Hyg. 75:799-806. 4. Cropp, C.B., et al. Personal communication. 1984.