

Virus Name: Navarro		Abbreviation: NAVV
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 Cali 874	Accession Number	Original Date Submitted 11/13/1984
Family Rhabdoviridae	Genus Not listed	
Information From Carlos Sanmartin	Address Cali Virus Laboratory, Universidad del Valle, Cali, Colombia	
Information Footnote Reviewed by editor		

Section II - Original Source

Isolated By (name) Cali Virus Laboratory	Isolated at Institute Cali, Colombia	
Host Genus Cathartes aura	Species	Host Age/Stage Adult
Sex Not Answered		
<u>Isolated From</u>	<u>Isolation Details</u>	
Organs/Tissues	Spleen	
Signs and Symptoms of Illness None observed	Arthropod	
Time Held Alive before Inoculation		
Collection Method Shot	Collection Date 10/15/1956	
Place Collected (Minimum of City, State, Country) Navarro, Cali, Colombia		
Latitude 3° 21' N	Longitude 76° 27' W	
Macrohabitat Cauca river margin. Peridomestic plantings of coffee, citrus, banana	Microhabitat Surrounded by pastures	Method of Storage until Inoculated Refrigeration at 4dC
Footnotes		

Section III - Method of Isolation

Inoculation Date 10/15/1956	
Animal (Details will be in Section 6) nb mice	
Route Inoculated Intracerebral	Reisolation
Other Reasons	
Homologous Antibody Formation by <u>Source Animal</u>	
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)	
<hr/>		
<u>Stability of Infectivity (effects)</u>		
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) 1:1000	After Treatment Titer <1.0 dex	Control Titer 3.5 dex
Other (formalin, radiation)		
<hr/>		
<u>Virion Morphology</u>		
Shape Rhabdovirus morphology	Dimensions 46-55 x 257 nm	
Mean nm	Range nm	
Measurement Method Electron microscopy (2)	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

Hemagglutination No	Antigen Source SMB ext. by sucrose-acetone + sonication, trypsin	Erythrocytes (species used) Goose
-------------------------------	--	---

pH Range 5.8-6.8	pH Optimum
----------------------------	------------

Temperature Range 4dC, 22dC, 37dC	Temperature Optimum
---	---------------------

Remarks

Serologic Methods Recommended
CF

Footnotes

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

Tests performed at YARU, informed by Dr. Robert E. Shope. Navarro mouse brain antigen did not react with hyperimmune mouse grouping ascitic fluids of groups A, B, C, Guama, Simbu, California, Anopheles A, Anopheles B, Turlock, Capim, Tacaribe, rabies-LCM, poxvirus, vesicular stomatitis, Quarantil, Kaisodi, Qalyub and phlebotomus fever.

Navarro mouse ascitic fluid (homologous titer = 512) was tested by CF and found negative with the following antigens: Belmont, D'Aguilar, Acara, Akabane, Amapari, Anhangá, Anopheles A, Anopheles B, Apeu, Aruac, BA 937, Bahig, Bakau, Bandia, Batai, Benfica, Agua Preta, Belem, Urucuri, Bertioga, Bhanja, Boraceia, Bujaru, Bunyamwera, Bushbush, Buttonwillow, Bwamba, Upolu, California, ConnAn 114, Candiru, Capim, Caraparu, Charleville, Chaco, Cagres, Chandipura, Changuinola, Chenuda, CoAr 3627, Congo, Cotia, Colorado tick fever, Dugbe, Thimiri, EgAn 1398-61, EHD-NJ, Embu, Eretmapodites 147, EgAn 1825-61, Eubenangee, Farallon, Hart Park, Ganjam, Germiston, Karimabad, Grand Arbaud, Guajara, Guama, Guaroa, Hughes, Icoaraci, Ieri, Ilesha, Ingwavuma, Salehabad, Itaporanga, Arkonam, I 61-2629, Kannamangalam, Sembalam, Nyando, Arumowot (IbAn 15736), Oyo, Gabek Forest (IbAn 10065), IbAn 28946, IbAn 15736, IbAn 17143, Mokola, Jos, Orungo (IbH 11306), kotonkan, La Joya, Johnston Atoll, Junin, Jurona, Kairi, Kaisodi, Kamese, Kemerovo, Kern Canyon, Ketapang, Koongol, Kwatta, Lagos bat, Lanjan, Lebombo, Lone Star, Lukuni, Klamath, Mapputa, Marco, Melao, Minatitlan, Minnal, Mirim, Mossuril, Almpiwar, Mt. Elgon, Murutucu, Naples, Nepuyo, Nkolbisson, Nyamanini, Nyando, Olifantsvlei, Oropouche, Pacui, Manawa, Lahore (Bakau), Palyam, Patois, Pichinde, Piry, Punta Toro, Qalyub, Quarantil, Sathuperi, Sawgrass, SH 763, Sicilian, Silverwater, Simbu, Soldado, Sororoco, Tacaiuma, Tacaribe, Tamiami, Tataguine, Tembe, Tete, Thogoto, Timbo, Tribec, Trinita, trivittatus, Turlock, Umbre, Utinga, Uukuniemi, VSI, VSNJ, Wad Medani, Wanowrie, Witwatersrand, Wongal, Wyeomyia, Yaba-1, Herpes simplex, LCM, NDV, rabies, ectromelia, reovirus 3.

In Cali, Navarro immune mouse serum was negative by CF with lymphogranuloma venereum antigen.

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 +/- (g)
		Day (c)	Extent (d)	Titer TCD50/ml (e)	Day (c)	Size (f)	Titer PFU/ml (e)	
Vero (CL)	SM 9				2	1.0 mm	6.8* (1)	
LLC-MK2 (CL)					10	3.0 mm	6.0 (1)	

* 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
Cathartes aura (bird)	1/1		Navarro, Cali, Colombia
Wild birds representing 31 different species	0/132		

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 log ₁₀ /ml
Mice (nb)	SM 2	ic 0.02	Death	3.6-4.4	4.4
Mice (nb)		ip 0.02	None		
Mice (nb)		sc			
Mice (wn)		ic 0.03	None		
Mice (wn)		ip 0.1	Production of CF antibody		

Section IX - Experimental Arthropod Infection and Transmission

Arthropod species & virus source (a)	Method of Infection log ₁₀ /ml (b)		Incubation period (c)		Transmission by bite (d)		Assay of arthropod, log ₁₀ /ml (e)		
	Feeding	Injected	Days	°C	Host	Ratio	Whole	Organ	System
<i>Aedes aegypti</i>	Cali 874 virus was found to multiply in salivary glands of mosquitoes following intrathoracic inoculation. No multiplication could be demonstrated with similar trials in <i>Culex quinquefasciatus</i> and <i>Anopheles quadrimaculatis</i> . (Experiments of Loring Whitman, 1958.)								

Section X - Histopathology

Character of lesions (specify host)	
<u>Inclusion Bodies</u>	<u>Intranuclear</u>
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) Colombia
Suspected (Antibody only detected)

Section XIII - References

1. Stim, T.B. 1969. J. Gen. Virol. 5:329-338. 2. Karabatsos, N., et al. 1973. J. Gen. Virol. 21:429-433.

Remarks
