Virus Name: Nepuyo		Abbreviation: NEPV
Status **Arbovirus**	Select Agent **No**	SALS Level **2**

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

Other Information

Antigenic Group
C

SECTION I - Full Virus Name and Prototype Number

Prototype Strain Number / Designation
TRVL 18462

Accession Number

Original Date Submitted
2/3/1985

Family
Bunyaviridae

Genus
Bunyavirus

Information From
Trinidad Reg. Virus Lab.

Address
P.O. Box 164, Port of Spain, Trinidad

Information Footnote
Reviewed by editor

Section II - Original Source

Isolated By (name)
TRVL (3)

Isolated at Institute
Port of Spain, Trinidad

Host Genus
Culex (Aedinus) accelerans (= sp. No. 8; pool of 190 mosq.)

Species

Host Age/Stage
Adult

Sex
Female

Isolated From

Isolation Details

Signs and Symptoms of Illness

Arthropod

Time Held Alive before Inoculation

Collection Method
Human bait

Collection Date
11/20/1957

Place Collected (Minimum of City, State, Country)
Nariva-Mayaro County, Trinidad

Latitude
10° 18' N

Longitude
61° 7' W

Macrohabitat
Archer Estate; 6 miles east of Rio Claro, south-east Trinidad

Microhabitat
Collection made out-of-doors at ground level on cacao estate

Method of Storage until Inoculated
Held alive overnight at 4C before sorting and grinding

Footnotes

Section III - Method of Isolation

Inoculation Date
11/21/1957

Animal (Details will be in Section 6)
nb mice

Route Inoculated
Intracerebral

Reisolation
No

Other Reasons
No Group C virus present in laboratory prior to isolation of this virus

Homologous Antibody Formation by Source Animal

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)	

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 **<1.8 dex**	Control Titer **4.6 dex**

Other (formalin, radiation)

Virion Morphology

Shape	Dimensions
Mean nm	Range nm
Measurement Method	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	Antigen Source	Erythrocytes (species used)
Yes	**SM serum acetone extracted**	**Goose**
pH Range	pH Optimum	
6.0-6.4	**6.0**	
Temperature Range	Temperature Optimum	
4 - 37d C	**4dC**	

Remarks
Personal communication from R.E. Shope, Belem

Serologic Methods Recommended
HI, CF, NT

Footnotes
Personal communication from R.E. Shope, Belem

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

An antigen prepared by acetone-ether extraction from suckling mouse brain infected with Nepuyo virus failed to react in CF with the following antisera:

EEE	Makonde	SF Naples
WEE	Ntaya	Tacaiuma
Semliki	Oriboca	Quaranfil (EgAr 1095)
Chikungunya	Marituba	Chenuda (EgAr 1152)
Sindbis	Apeu	Anopheles A
Ilheus	Catu	Turlock
Yellow fever	Guama	Bwamba
St. louis	Bimiti	Rift Valley fever
Dengue	California enc.	Simbu
Rio Bravo	Melao	Mengo
JBE	Bunyamwera	Lukuni
West Nile	Wyeomyia	Triniti
RSSE	Kairi	Ieri
Spondweni	Cache Valley	Aruac
Zika	Guaroa	Tacaribe
		GD VII

Hyperimmune mouse serum to Nepuyo virus inhibited hemagglutination by TRVL 34053-1 virus, a Group C virus which is closely related to Caraparu virus.
HI tests carried out by Dr. Robert Shope, Belem, and by Dr. Loring Whitman, New York, confirmed that Nepuyo is a Group C virus. Both found the virus to be closely related to a Belem Group C isolate, BeAn 10709 [4] .
Nepuyo is most closely related to Murutucu and Marituba by HI and NT, and to Apeu and Marituba by CF [4] .

SIRACA considers Nepuyo virus to be a distinct virus in the Marituba complex, one of four complexes comprising serogroup C. An unregistered virus, 63UII, was antigenically classified as a variety of Nepuyo virus [13] .

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	
		Day (c)	Extent (d)	Titer TCD50/ml (e)	Day (c)	Size (f)	Titer PFU/ml (e)	+/- (g)	
Hamster kidney(PC)	MB 11	6-8	CPE						
Vero(CL)	TRVL 18462				6	2-3 mm	4.1* (5)		
Vero (CL)	P-3				5	2 mm	8.6 (14)		
LLC-MK2 (CL)					7	2 mm	6.0 (14)		

* 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
Man	0/2,500	4/35 NT	Trinidad
Cebus (monkey)	0/26		
Alouatta (monkey)	0/79		
Birds	0/2,300		
Sentinel mice	0/4,303		
Sentinel mice	15		Para, Brazil (1)
Proechimys	1		Utinga Forest, Belem Brazil (1)
Nectomys	1		Para, Brazil (1)
Culex (Ads) accelerans (= sp. 8)	1		Southeast Trinidad
Culex spp.	2		Para, Brazil (1)
Artibeus jamaicensis	1		Honduras (8)
Artibeus lituratus (fruit-eating bats)	1		
Mosquitoes and sentinel hamsters, mice	23		SE Mexico (9)
Man (blood)	2		Guatemala (11, 12)

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)	MB 14	ic 0.02	Illness, viremia, death	3-5	6.0
Mice (nb)		ip	Illness, death		4.0
Mice (nb)		sc			
Mice (wn)	MB 13	ic 0.03	None		
Mice (wn)		ip 0.2	None		
Mice (nb)		sc	Illness, death		4.6
chick emb.	MB 4	am.s.	None		
		al.c.	None		
		ys	None		

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

Ae aegypti and Cx quinquefasciatus, inoculated parenterally, maintained the prototype strain through 2 serial salivary gland passages (6).

Culex spp., naturally infected, transmitted to mice (7).

Section X - Histopathology

Character of lesions (specify host)
Adult and baby mice experimentally infected with BeAn 10709 showed lesions limited to the CNS, characterized by hydropic tumefaction, chromatolysis, retraction and necrosis of diffuse distribution (2).

Inclusion Bodies — Intranuclear

Organs/Tissues Affected

Category of tropism

Section XI - Human Disease

In Nature — Residual — Death
Reported

Subclinical — Overt Disease

Clinical Manifestations
Fever (R), headache (R), myalgia (R)

Number of Cases
Two (11,12)

Category (i.e. febrile illness, etc.)
Febrile illness

Section XII - Geographic Distribution

Known (Virus detected)
Trinidad, Honduras (8), Mexico (9); Panama (10); Brazil, Guatemala

Suspected (Antibody only detected)

Section XIII - References

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Remarks