

Virus Name: Nique		Abbreviation: NIQV
Status Possible Arbovirus	Select Agent No	SALS Level 2
SALS Basis Results of SALS surveys and information from the Catalogue.		
Other Information		
Antigenic Group Phlebotomus Fever		

SECTION I - Full Virus Name and Prototype Number

Prototype Strain Number / Designation Nique-9C	Accession Number	Original Date Submitted 7/6/1984
Family Bunyaviridae	Genus Phlebovirus	
Information From Robert B. Tesh	Address Yale Arbovirus Research Unit	
Information Footnote Revised		

Section II - Original Source

Isolated By (name) R. Tesh and P. Peralta	Isolated at Institute Middle America Research Unit, Panama	
Host Genus Lutzomyia panamensis (pool of 6 sandflies)	Species	Host Age/Stage Adults
Sex Female		
<u>Isolated From</u>	<u>Isolation Details</u>	
Signs and Symptoms of Illness	Arthropod Depleted	
Time Held Alive before Inoculation <12 hours		
Collection Method Light trap	Collection Date 4/22/1972	
Place Collected (Minimum of City, State, Country) Cerro Nique, Darien Prov., Panama		
Latitude 7° 40' N	Longitude 77° 45' W	
Macrohabitat Tropical forest (700 meter elevation)	Microhabitat Ground level	Method of Storage until Inoculated Liquid nitrogen, then at -70dC
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)

Not tried

pH Range

pH Optimum

Temperature Range

Temperature Optimum

Remarks

Serologic Methods Recommended

CF, NT

Footnotes

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

Nique CF antigen (homologous = >2056/512) did not react with immune sera for Groups A, B, C, PHL, TCR, CAP, SIM, CAL, and BUN; or with specific antisera for ANA, ANB, TUR, MAN, VSI, VSNJ, VSA, COC, PIRY, CHP, PAC, CGL, SFN, SFS, PT, CHG, ICO, CDU, ITP, KAR, ANH, BW, AMT, GF, URU, BUE, SAL, FRI, CHI, CAI, CAC and AGU.

Nique hyperimmune hamster serum did not react in CF tests with suckling hamster brain antigens for SFN, SFS, CHG, ICO, ITP, KAR, ANH, PAC, BUJ, AMT, GF, BUE, SAL, CAC, URU, FRI, CAI, CHV and AGU viruses [1].

CF or NT relationships were demonstrated between Nique and four other Phlebotomus fever group agents (Candiru, Punta Toro, Icoaraci and Agucate) as noted below.

Antiserum	Antigen or Virus									
	Nique		Candiru		Punta Toro		Agucate		Icoaraci	
	CF	NT	CF	NT	CF	NT	CF	NT	CF	NT
Nique	>2048/512	128	8/64	16	16/64	0	16/16	0	0	16
Candiru	128/512	0	256/512	512	0	0	0	0	0	0
Punta Toro	0	64	0	512	64/256	8192	0	0	0	64
Agucate	0	0	0	0	0	0	>512/128	512	0	0
Icoaraci	0	32	0	512	0	1024	0	0	>2048/256	32000

CF: Antibody titer/antigen titer; 0 = <4/<4.

NT: Results as reciprocal of highest serum dilution producing >90% plaque reduction; 0 = <16.

Cross-neutralization tests (plaque method) using Nique virus and hyperimmune serum (homologous titer = 128) were done against each of the following viruses and specific antisera with negative results: SFN, SFS, CHG, GF, RVF, ITP, KAR, ANH, BUJ, AMT, BUE, SAL, ITA, GOR, SAF, SAL, URU, TUA, FRI, CAI, CHI, CAC, and CHV [1], [2].

In addition, see References [4], [5].

Section VI - Biologic Characteristics

Virus Source (all VERTEBRATE isolates)
heart (LV), skeletal muscle (LV)

Lab Methods of Virus Recovery (ALL ISOLATIONS)
Vero cell cultures, 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)	Vero 2, HB 1, MB 1				5	1-2 mm	5.8*	

* 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
Lutzomyia panamensis	1/12		Darien Prov., Panama
Lutzomyia trapidoi (males)	0/197		
Lutzomyia trapidoi (females)	0/1,257		
Lutzomyia sp. (both sexes)	0/252,512		Panama Prov., Panama

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)	(N-9c)	ic	Death	7.5	5.0
Mice (nb)	Vero2, HB1, MB1	ip			
Mice (nb)		sc			
Mice (wn)		ic			
Mice (wn)		ip			
hamster (nb)		ic 0.02	Death	9.3	
hamster (wn)	sc 0.1	Survival and antibody			

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
Nique virus did not multiply or survive in Aedes albopictus or Culex quinquefasciatus after inoculation (3).									

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) Panama
Suspected (Antibody only detected)

Section XIII - References

1. Tesh, R.B., et al. 1975. Am. J. Trop. Med. and Hyg. 24:135-144. 2. Tesh, R.B. Unpublished data. 3. Tesh, R.B 1975. J. Med. Ent. 12:1-4. 4. Tesh, R.B., et al. 1982. Am. J. Trop. Med. Hyg. 31:149-155. 5. Travassos da Rosa, A.P.A., et al. 1983. Ibid. 32:1164-1171.
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Remarks

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