

Virus Name: Lukuni		Abbreviation: LUKV
Status Possible Arbovirus	Select Agent No	SALS Level 2
SALS Basis Results of SALS surveys and information from the Catalogue.		
Other Information		
Antigenic Group Anopheles A		

SECTION I - Full Virus Name and Prototype Number

Prototype Strain Number / Designation TRVL 10076	Accession Number	Original Date Submitted 1/24/1985
Family Bunyaviridae	Genus Bunyavirus	
Information From Trinidad Regional Virus Laboratory	Address P.O. Box 164, Port of Spain, Trinidad	
Information Footnote Reviewed by editor		

Section II - Original Source

Isolated By (name) TRVL (1)	Isolated at Institute Port of Spain, Trinidad	
Host Genus Aedes (Ochlerotatus) scapularis (9 mosquitoes)	Species	Host Age/Stage Adult
Sex Female		
<u>Isolated From</u>	<u>Isolation Details</u>	
Signs and Symptoms of Illness	Arthropod	
Time Held Alive before Inoculation		
Collection Method Human bait	Collection Date 10/14/1955	
Place Collected (Minimum of City, State, Country) County St. Andrew, Trinidad		
Latitude 10° 38' N	Longitude 61° 3' W	
Macrohabitat Melajo Forest, northeast Trinidad	Microhabitat Evergreen seasonal forest; mosquitoes taken at ground level	Method of Storage until Inoculated Held alive overnight at 4dC before sorting and grinding
Footnotes		

Section III - Method of Isolation

Inoculation Date
10/15/1955

Animal (Details will be in Section 6)
nb mice

Route Inoculated
Intracerebral

Reisolation
Yes

Other Reasons

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 1.9 dex	Control Titer 4.8 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

Hemagglutination

No

Antigen Source

SMB ext. by acetone-ether; sucrose-acetone

Erythrocytes (species used)

Goose

pH Range

6.0-7.0

pH Optimum

Temperature Range

4dC, 22dC, and 37dC

Temperature Optimum

Remarks

Serologic Methods Recommended

CF, NT

Footnotes

An antigen prepared from Lukuni virus failed to react with the following mouse hyperimmune sera in CF:

EEE	West Nile	Melao
WEE	RSSE	Bunyamwera
Chikungunya	Spondweni	Wyeomyia
Sindbis	Zika	Kairi
Ilheus	Makonde	Cache Valley
Yellow fever	Ntaya	Guaroa
St. Louis	Oriboca	SF Naples
Dengue	Marituba	Tacaiuma
Rio Bravo	Apeu	Wad Medani
JBE	California enceph.	Quaranfil (EgAr 1095)
Turlock	Bwamba	Chenuda (EgAr 1152)
Rift Valley fever	Simbu	Mengo
Triniti	Ieri	Aruac
Nepuyo	Tacaribe	GD VII

Lukuni virus was found to be related to Anopheles A virus in CF and NT [1].

Section VI - Biologic Characteristics

Virus Source (all VERTEBRATE isolates)
 Blood (M)(LV), lung (LV), CNS (LV)

Lab Methods of Virus Recovery (ALL ISOLATIONS)
 Newborn and weanling mice

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)		
Hamster kidney (PC)	MB 25		No CPE						
Vero (CL)	TRVL 10076				13	0.5-1.0 mm	2.8** (4)		

** Expressed in dex

Vertebrate (species and organ) and arthropod	No. isolations/No. tested	No. with antibody/No. tested Test used	Country and region
Man	0/2,500	7/45	Trinidad
Cebus (monkey)	0/26		
Alouatta (monkey)	0/79		
Sentinel mice	0/4,303		
Birds	0/2,300		
Aedes (Och) scapularis	2		Melajo Forest, Trinidad
Aedes (Och) scapularis	1		Rio Grande Forest, Trinidad
Anopheles nimbus	1		Brasilia Highway, Belem, Brazil (2)
Ae scapularis	2		Para, Brazil (3)

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)	MB 23	ic 0.02	Illness, death	4-7	2.8
Mice (nb)		ip 0.03	None		
Mice (nb)		sc			
Mice (wn)	MB 25	ic 0.03	Illness, death	8-11	2.6
Mice (wn)		ip 0.2	None		
chick emb.(10 day)		am.s.	None		
chick emb.(10 day)		al.c.	None		
chick emb.(7 day)		ys	None		

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

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) Trinidad, Brazil
Suspected (Antibody only detected)

Section XIII - References

1. Spence, L, et al. 1967. Proc. Soc. Exp. Biol. Med. 125:45-50. 2. Woodall, J.P. 1967. Atas Simpos. Biota Amazon, 6:31-63. 3. Woodall, J.P. Personal communication. 1972. 4. Bergold, G.H. and Mazzali, R. 1968. J. Gen. Virol. 2:273-284.
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Remarks
