Virus Name: Lagos bat	Abbreviation: BATV

Status
Not Arbovirus

Select Agent
No

SALS Level
2

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

Other Information

Antigenic Group
Rabies

SECTION I - Full Virus Name and Prototype Number

Prototype Strain Number / Designation

Accession Number

Original Date Submitted
2/9/1985

Family
Rhabdoviridae

Genus
Lyssavirus

Information From
Dr. J.S. Porterfield

Address
National Institute for Medical Research, Mill Hill, London NW/ 1AA, England

Information Footnote
Reviewed by editor

Section II - Original Source

Isolated By (name)
L.R. Boulger (1)

Isolated at Institute
Lagos, Nigeria

Host Genus
Fruit bat (Eidolon helvum)

Species

Host Age/Stage
Adult

Sex
Male

Isolated From	Isolation Details
Organs/Tissues	**Pool of six brains**

Signs and Symptoms of Illness
Nil

Arthropod

Time Held Alive before Inoculation

Collection Method
Wild bats shot at rest in a tree

Collection Date
2/1/1956

Place Collected (Minimum of City, State, Country)
Lagos Island, Nigeria, West Africa

Latitude
6° 28' N

Longitude
3° 28' E

Macrohabitat
Lagos township

Microhabitat
Tropical hot and humid

Method of Storage until Inoculated
Carcasses dissected within 1 hour of shoot

Footnotes

Section III - Method of Isolation

Inoculation Date
2/1/1956

Animal (Details will be in Section 6)
wn mice

Route Inoculated
Intracerebral

Reisolation
Yes

Other Reasons

Homologous Antibody Formation by Source Animal
Not tested

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) **50%**	After Treatment Titer **<1.0 dex**	Control Titer **5.5 dex**
Lipid Solvent (chloroform)	After Treatment Titer	Control Titer
Lipid Solvent (deoxycholate) **1:1000**	After Treatment Titer **<2.0 dex**	Control Titer **4.5 dex**

Other (formalin, radiation)

Virion Morphology

Shape **Bullet-shaped**	Dimensions **180 x 65 nm**	
Mean nm	Range nm	
Measurement Method **Electron microscopy**	Surface Projections/Envelope	Nucleocapsid Dimensions, Symmetry **Helical capsid (2): diameter: 65**

nm

Morphogenesis

Site of Constituent Formation in Cell	Site of Virion Assembly	Site of Virion Accumulation
	Matures by budding at intracytoplasmic membranes	
Inclusion Bodies	Other	

Hemagglutination

Hemaggiutination	Antigen Source	Erythrocytes (species used)
No	**SMB ext. by acetone-ether**	**Goose**
pH Range	pH Optimum	
6.0-7.5		
Temperature Range	Temperature Optimum	
4dC - 37dC		

Remarks

Serologic Methods Recommended
CF and NT

Footnotes

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

Antigenic relationships [2]

Related to rabies virus, and to IbAn 27377 (Mokola virus) [5] by CF and NT, but readily distinguishable from both [2] .

Unrelated to: [1]

Group A:	Chikungunya, EEE, Sindbis, WEE
Group B:	Rio Bravo, Ntaya, West Nile, Zika
Group C:	Marituba, Oriboca, Apeu
Guama:	Guama, Catu
Bunyamwera:	Bunyamwera, Kairi, Wyeomyia
Simbu:	Simbu, Oropouche, Manzanilla
Others:	Anopheles A, Tacaiuma, Bwamba, Colorado tick fever, Turlock, Wad Medani (Ar 492) Quaranfil Sandfly fever Naples Mouse encephalomyelitis GDVII, Mengo, EMC Poliomyelitis MEFI

Section VI - Biologic Characteristics

Virus Source (all VERTEBRATE isolates)
Spleen-heart pool(LV), spleen-heart-pancreas-lung-kidney pool(LV)

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)	
Vero (CL)						Plaques (3)			
VSW (CL)			Replication (4)						
GL1 (CL)			Serial propagation (4)						

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
Fruit bat (Eidolon helvum)	1/7 *		Lagos, Nigeria
Micropteropus pusillus (bat)	1		Centr.Afr. Empire (6)
Unidentified bat	1		Pinetown, S. Africa (7)
Epomophorus wahlbergi	5		

* 1/7 brain pools; 0/7 salivary gland pools. Total of 42 bats examined.

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)		ic			
Mice (nb)		ip			
Mice (nb)		sc			
Mice (wn)	1st mouse	ic 0.03	Death	14.8	4.2
Mice (wn)	""	ip 0.03	Nil		
Mice (wn)	7th mouse	ic 0.03	Death	7.2	5.3
guinea pig (ad)	2nd mouse	im 1.0	Nil		
rabbit (ad)		im 1.0	Nil		
monkey (ad)	5th mouse	sc	Nil		
Cercocebus torquatus torquatus		ic	Death (5)		
dog (ad)		ic	Death (5)		

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
Aedes aegypti, 5th mouse	Mosquitoes were not infected by membrane feeding; did not transmit to mice.								

Section X - Histopathology

Character of lesions (specify host)
Mice, ic: infected mouse brains showed cuffing of blood vessels and neuronal degeneration, but no Negri bodies were seen.

Inclusion Bodies — Intranuclear

Organs/Tissues Affected
Brain (LV)

Category of tropism
Neurotropic

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)
Nigeria, Central African Republic (6), S. Africa (7).

Suspected (Antibody only detected)

Section XIII - References

1. Boulger, L.R. and Porterfield, J.S. 1958. Trans. Roy. Soc. Trop. Med. Hyg. 52:421-424.
2. Shope, R.E., et al. 1970. J. Virol. 6:690-692.
3. Stim, T.B. 1969. J. Gen. Vriol. 5:329-338.
4. Clark, H.F. 1972. Proc. Soc. Exp. Biol. Med. 139:1317-1325.
5. Tignor, G.H., et al. 1973. J. Infect. Dis. 128:471-478.
6. Sureau, P. 1977. Bull. Soc. Path. Exot. 70:467-470.
7. Meredith, C.D. and Standing, E. 1981. Lancet i, 832-833.

Remarks

In view of the finding that Lagos bat virus is a rhabdovirus antigenically related to rabies virus, it should no longer be regarded as an arbovirus.