Virus Name: Ife	Abbreviation: IFEV

Status
Possible Arbovirus

Select Agent
No

SALS Level
3

SALS Basis
Isufficient experience with virus; i.e., experience factor from SALS surveys was less than 500 in laboratory facilities with low biocontainment.

Other Information

Antigenic Group
Ungrouped

SECTION I - Full Virus Name and Prototype Number

Prototype Strain Number / Designation
IbAn 57245

Accession Number

Original Date Submitted
10/12/1984

Family
Reoviridae

Genus
Orbivirus

Information From
G.E. Kemp and N. Karabatsos

Address
DVBVD, CDC, P.O. Box 2087, Fort Collins, Colorado 80522, USA

Information Footnote
Revised by editor

Section II - Original Source

Isolated By (name)
G.E. Kemp

Isolated at Institute
Virus Res. Lab., U. Ibadan, Nigeria

Host Genus
Eidolon helvum (bat)

Species

Host Age/Stage

Sex
Not Answered

Isolated From	Isolation Details
Serum/Plasma	

Signs and Symptoms of Illness

Arthropod

Time Held Alive before Inoculation

Collection Method
Shooting of resting bats at roosting sites

Collection Date
4/7/1971

Place Collected (Minimum of City, State, Country)
Ile Ife Univ. Campus, Ile Ife, Nigeria

Latitude
7° 33' N

Longitude
4° 34' E

Macrohabitat
High forest vegetative zone

Microhabitat
Oil palm trees

Method of Storage until Inoculated
Liquid nitrogen

Footnotes

Section III - Method of Isolation

Inoculation Date
4/9/1971

Animal (Details will be in Section 6)
nb mice

Route Inoculated
Intracerebral

Reisolation
Yes

Other Reasons
Virus distinct from others in laboratory; other isolates from bats collected in Nigeria and Cameroun.

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)
Inactivated after 3 hours, 4C, pH 3.0: 2.0 dex; pH 7.8: 5.5 dex

Lipid Solvent (ether - % used to test)	After Treatment Titer	Control Titer
Lipid Solvent (chloroform) **10%**	After Treatment Titer **5.3 dex**	Control Titer **5.2 dex**
Lipid Solvent (deoxycholate)	After Treatment Titer	Control Titer

Other (formalin, radiation)

Virion Morphology

Shape **Spherical**	Dimensions	
Mean **65 nm**nm	Range **60-75 nm**nm	
Measurement Method **Thin-section electron microscopy (1)**	Surface Projections/Envelope **Occasional particle with pseudoenvelope**	Nucleocapsid Dimensions, Symmetry

Morphogenesis

Site of Constituent Formation in Cell	Site of Virion Assembly	Site of Virion Accumulation
		Cytoplasm

Inclusion Bodies	Other
Fibrogranular cytoplasmic inclusions	

Hemagglutination

Hemaggiutination	Antigen Source	Erythrocytes (species used)
No	**SMB ext. by sucrose-acetone**	**Goose**

pH Range	pH Optimum
5.8-7.0	

Temperature Range	Temperature Optimum
Room temperature	

Remarks

Serologic Methods Recommended
CF

Footnotes

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

Previous serological studies conducted in Ibadan indicated that these isolates were unrelated by CF to any viruses held at the Ibadan laboratory [2] .
Subsequently, 1:8 and 1:32 dilutions of a CF antigen for the IbAn 57245 strain (homologous titer = 256/64) were tested against and failed to react with a 1:4 dilution of the following NIH grouping fluids: Polyvalent Palyam (PAL, VEL, KAS, COR, ACD, EUB, PATA, DAG); Gr. Kemerovo; Polyvalent no. 8 (BLU, EHD, CGL, IRI, CTF, IbAr 22619). In addition, CF antigen and antibody for IbAn 57245 failed to react with systems for Eyach virus (256/>128), 5 strains of Orungo virus (32/64 to 256/32), Mitchell River virus (32/>32), Warrego virus (>256/>32), Japanaut virus (8/2), Lebombo virus (32/>32), and IbAr 39626 (256/>128). CF antigen for IbAn 57245 did not react with antibody to reovirus, type 3 (titer = 64). Umatilla rabbit antiserum (LNI = 3.0) did not neutralize Ife virus. YV177 virus (64/32), isolated from Eidolon helvum bats collected in Cameroun, reacted indistinguishably in CF with Ife virus and was considered to be a strain of Ife virus.

Section VI - Biologic Characteristics

Virus Source (all VERTEBRATE isolates)
Blood (LV), CNS (LV), salivary glands (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)	
BHK-21 (CL)	SM6	4	CPE						
Vero (CL)		4	CPE						
Vero (CL)	SM6 SH1 V1				6-7	< 1 mm	4.2*		

* 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
Eidolon helvum bats (blood)	2/68		Ile Ife, Nigeria; 1971
Eidolon helvum bats	4 */157		Abuja, Nigeria; 1971
Eidolon helvum bats (sal. gland)	1/55		Saa, Cameroun; 1971 (3)
Cricetomys Gambianus	8% CF		Zaria, Nigeria (5)
Arvicanthis niloticus	31% CF		Zaria, Nigeria (5)

* Three isolates obtained from blood, CNS, and salivary glands from a single bat. The fourth isolate was obtained from salivary glands of another bat.

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)	IbAn 57245, P-3	ic	Death	6.3	
Mice (nb)	P-3	ip	None		
Mice (nb)		sc			
Mice (wn)		ic			
Mice (wn)		ip			
mice (10 day)		ic	3/6 inoculated animals died		
mice (10 day)		ip	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

Section X - Histopathology

Character of lesions (specify host)
SM, ic: Endothelial swelling, mononuclear perivascular cuffs, focal necrosis with mild polymorphonuclear infiltration, minimal neuronal degeneration.

Inclusion Bodies — Intranuclear

Organs/Tissues Affected
Basal portions of brain (4)

Category of tropism
CNS

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, Cameroun (3)

Suspected (Antibody only detected)

Section XIII - References

1. Cropp, C.B. Personal communication.
2. Kemp, G.E. and Moore, D.L. Unpublished data.
3. LeGondec, G. Personal communication.
4. Chandler, F. Personal communication.
5. Ezeifeka, G.O. et al. 1987. J. Wildlife Dis. 23: 663-665.

Remarks