Virus Name: Mount Elgon bat	Abbreviation: MEBV

Status
Probably not Arbovirus

Select Agent
No

SALS Level
2

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

Other Information

Antigenic Group
Ungrouped

SECTION I - Full Virus Name and Prototype Number

Prototype Strain Number / Designation
BP846

Accession Number

Original Date Submitted
10/15/1984

Family
Rhabdoviridae

Genus
Not listed

Information From
D. Metselaar

Address
Netherlands Medical Research Centre, P.O.B. 9370, Nairobi, Kenya

Information Footnote
Reviewed by editor

Section II - Original Source

Isolated By (name)
EAVRI, Entebbe (1)

Isolated at Institute
Uganda

Host Genus
Rhinolophus hildebrandti eloquens

Species

Host Age/Stage
Adult

Sex
Male

Isolated From	Isolation Details
Other Fluids	**Salivary glands**

Signs and Symptoms of Illness
Not observed

Arthropod

Time Held Alive before Inoculation

Collection Method
Netted

Collection Date
8/9/1964

Place Collected (Minimum of City, State, Country)
Kimilili-Bungoma District, Kenya

Latitude
0° 8' N

Longitude
34° 7' E

Macrohabitat
Cave on slope of Mount Elgon

Microhabitat
Cave

Method of Storage until Inoculated
-70dC

Footnotes

Section III - Method of Isolation

Inoculation Date
10/19/1964

Animal (Details will be in Section 6)
nb mice

Route Inoculated
ic, ip and sc

Reisolation
Not tried

Other Reasons
First and only isolation in the laboratory

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) **50%**	After Treatment Titer **3.3 dex**	Control Titer **6.1 dex**
Lipid Solvent (chloroform)	After Treatment Titer	Control Titer
Lipid Solvent (deoxycholate)	After Treatment Titer	Control Titer

Other (formalin, radiation)

Virion Morphology

Shape **Bullet-shaped, rhabdovirus (2)**	Dimensions **68 x 226 nm**	
Mean nm	Range nm	
Measurement Method **Electron microscopy (2)**	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)
No	**SMB ext. by sucrose-acetone, Arcton, tr. by protamine**	**Goose**
pH Range	pH Optimum	
Temperature Range	Temperature Optimum	

Remarks
Low virus titer in serum and liver of infected mice

Serologic Methods Recommended
CF, NT

Footnotes
Low virus titer in serum and liver of infected mice

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

A sucrose acetone antigen (homologous titer 80/160) failed to react in complement-fixation tests with hyperimmune antisera to the following arboviruses known to occur in Africa:

Group A:	chikungunya, Semliki Forest, Sindbis, Middelburg.
Group B:	West Nile, Uganda S.
Bunyamwera Group:	Bunyamwera, Germiston, Ilesha, Olifantsvlei and Shokwe.
Bwamba Group:	Bwamba, Pongola.
Quaranfil Group:	Quaranfil, Chenuda.
Simbu Group:	Simbu, Ingwavuma, Yaba 1, Sango.
Nyando Group:	Nyando.
California Group:	Lumbo.
African Horse Sickness:	African horse sickness (VH).
Bluetongue:	bluetongue (Petrusville).
CHF-Congo:	Congo.
Kemerovo:	Wad Medani.

Mossuril:	Mossuril.
Nairobi Sheep Disease:	Nairobi sheep disease.
Nyamanini:	Nyamanini.
Phlebotomus Fever:	Arumowot.
Rabies Serogroup:	Lagos bat, Obodhiang (Ar 1275-64).
Tete:	Matruh.
Thogoto:	Thogoto.
Ungrouped:	AMP 5438, AR 1169-64, Eretmapodites 147, Tataguine, Lebombo, Orungo, Tanga, Okola, Witwatersrand.

Negative results also with hyperimmune sera to Junin, Tacaribe and Kern Canyon viruses. No reaction with herpes simplex immune serum. The virus was not neutralized by rabies antiserum.
Hyperimmune BP846 antiserum failed to inhibit hemagglutinating antigens for the following arboviruses known to occur in Africa:

Group A:	chikungunya, Middelburg, Ndumu, o'nyong-nyong, Semliki Forest, Sindbis.
Group B:	Bukalasa bat, Dakar bat, dengue 1, Entebbe bat, Banzi, Ntaya, Spondweni, Uganda S, Wesselsbron, West Nile, yellow fever, Zika.
Bunyamwera Group:	Bunyamwera.
Simbu Group:	Ingwavuma.

No cross-reactivity by CF, NT and immunodiffusion tests with any of the known rhabdoviruses of animals [2] .

Mount Elgon bat virus was placed in the Vesicular Stomatitis antigenic group through its relationship with Klamath virus [3] .

Section VI - Biologic Characteristics

Virus Source (all VERTEBRATE isolates)
Blood (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)			No CPE						
Chick embryo (PC)			No CPE						
MK (PC)			No CPE						
Mouse embryo (PC)			No CPE						

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
Rhinolophus hildebrandti eloquens (bat)	1/13		Mount Elgon, Kenya (1)

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)	SMB 3	ic	Death	4-5	9.4
Mice (nb)		ip	Survived		
Mice (nb)		sc			
Mice (wn)		ic	Irregular deaths		
Mice (wn)		ip	Survived, antibodies		
guinea pigs (nb)	SMB 9	ic	Death	6	
guinea pigs (ad)		ip	Fever		
chicken embryo			Death	7	

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	Inoculation in thorax: No virus demonstrable in 5 mosquitoes suspended in 1 ml immediately after inoculation. Titers up to 3.3 dex in several pools sacrificed between 6 and 32. Other pools negative.								
Aedes aegypti	Fed on suspension of infected mouse brain in rabbit blood through bat wing membrane. Three mosquitoes in 1 ml after feeding showed titer of 2.5 dex. No virus in pools of mosquitoes tested between day 6 and day 20. Virus present in pools on day 22 and 27. Other experiments similar results. On no occasion transmission to suckling mice by bite. (1)								

Section X - Histopathology

Character of lesions (specify host)
Encephalitis: Infiltration with mononuclear cells, pycnosis of nuclei, ring infiltrates (nb mice).

Inclusion Bodies — Intranuclear

Organs/Tissues Affected
Brain (LV)

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)
Kenya, East Africa

Suspected (Antibody only detected)

Section XIII - References

1. Metselaar, D., et al. 1969. Arch. ges. Virusforsch. 26:183-193.
2. Murphy, F.A., et al. 1970. Virology 40:288-297.
3. Calisher, C.H. et al. 1989. Intervirology. In Press.

Remarks