Virus Name: Gabek Forest		Abbreviation: GFV
Status **Probable Arbovirus**	Select Agent **No**	SALS Level

SALS Basis

Other Information

Antigenic Group
Phlebotomus Fever

SECTION I - Full Virus Name and Prototype Number

Prototype Strain Number / Designation
SudAn 754-61

Accession Number

Original Date Submitted
5/14/1985

Family
Bunyaviridae

Genus
Phlebovirus

Information From
J.R. Schmidt, R.B. Tesh and R.E. Shope

Address
Naval Medical Research and Development Command and Yale Arbovirus Research Unit

Information Footnote
Reviewed by editor

Section II - Original Source

Isolated By (name)
Donald Heyneman

Isolated at Institute
Malakal, Sudan

Host Genus
Acomys cahirinus (albigena) (spiny mouse)

Species

Host Age/Stage
Adult

Sex
Not Answered

Isolated From	Isolation Details
Organs/Tissues	**Spleen**

Signs and Symptoms of Illness
None recorded

Arthropod

Time Held Alive before Inoculation

Collection Method
Live trap

Collection Date
4/17/1961

Place Collected (Minimum of City, State, Country)
Gabek Forest near Paloich, Sudan

Latitude
11° 0' N

Longitude
32° 30' E

Macrohabitat
Acacia-Balanites forest

Microhabitat
Forest floor

Method of Storage until Inoculated
Wet ice up to 48 hours

Footnotes

Section III - Method of Isolation

Inoculation Date

Animal (Details will be in Section 6)
Hamster

Route Inoculated

Reisolation
Not tried

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)	After Treatment Titer	Control Titer
Lipid Solvent (chloroform)	After Treatment Titer	Control Titer
Lipid Solvent (deoxycholate)	After Treatment Titer	Control Titer

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

Hemaggiutination	Antigen Source	Erythrocytes (species used)
Yes	**SMB ext. by sucrose-acetone + sonication**	**Gander**

pH Range	pH Optimum
5.8	**5.8**

Temperature Range	Temperature Optimum
Not tested	**Room temperature**

Remarks
Titer = 2 (strain IbAn 10065)

Serologic Methods Recommended
CF, NT

Footnotes
Titer = 2 (strain IbAn 10065)

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

In cross-CF tests, Gabek Forest (SudAn 754-61) and Arbia antigens and antisera reacted, and in PRNT Gabek Forest and Karimabad reacted as follows [1] , [2] :

	CF TEST Antiserum			PRNT Antiserum	
Antigen	**Gabek Forest**	**Arbia**	**Virus**	**Gabek Forest**	**Karimabad**
Gabek Forest	256/128 [b]	16/4	Gabek Forest	320 [c]	10
Arbia	<4/<4	256/256	Karimabad	20	320

[b] Reciprocal of highest antiserum dilution/reciprocal of highest antigen dilution.

[c] Reciprocal of highest serum dilution giving 90% plaque reduction.

Gabek Forest (SudAn 754-61) virus, antigen and antiserum were tested in cross- CF and -PRNT tests against the following phlebovirus antigens and antisera with negative results: AGU, ALE, ANH, AMT, BUE, BUJ, CAC, CAI, CDU, CHG, CHI, FRI, GOR, ICO, ITA, ITP, SFN, NIQ, PAC, PT, RVF, RG, SAF, SAL, SFS, TEH, TOS, TUA, URU [1] , [2] .

Section VI - Biologic Characteristics

Virus Source (all VERTEBRATE isolates)
Spleen (LV), liver (LV), serum (LV) (3)

Lab Methods of Virus Recovery (ALL ISOLATIONS)
Newborn mice (3), adult hamsters

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)	SudAn 754-61	3	3-4+		5-6	1-2 mm	7.0*		
LL-5 (CL)	SM9 Vero1		No CPE	5.7* PFU				+ (4)	

* 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
Man		31/90 NT	Sudan (5)
Man		3/115 NT	Nigeria (5)
Man		8/666 NT	Egypt (5)
Man		0/349 NT	Greece (5)
Man		0/48 NT	Somalia (5)
Man		0/300 NT	Iran (5)
Acomys cahirinus (albigena)	1/many		Paloich, Sudan
Atelerix albiventrix (hedgehog)	2		Nigeria (6)
Galago senegalensis (bushbaby)	2		
Tatera kempii (gerbil)	6		Nigeria; Dahomey; Senegal (6, 7)
Tatera sp. (gerbil)	1		Cent. Afr. Rep. (7)
Taterillus sp. (gerbil)	1		Senegal (7)
Taterillus gracilis (gerbil)	5		Nigeria (6)
Taterillus nigeriae (gerbil)	5		Nigeria; Dahomey(6)
Arvicanthis niloticus (rat)	26+		Nigeria; Cent. African Rep.(7)
Lemniscomys barbarus (mouse)	1		Dahomey (6)
Mastomys natalensis (mouse)	2		Nigeria; Dahomey(6)
Cricetomys gambianus (rat)	4		
Sentinel mouse	1		Ibadan, Nigeria

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 10065, H1 SM4 (3)	ic	Death	3.8	9.0
Mice (nb)		ip	Death	4.8	
Mice (nb)		sc			
Mice (wn)		ic	Death	3.4	
Mice (wn)		ip	Death	4.6	
Mice (ad)		ip	Antibody		
hamster (ad)		sc	Death	3	8.7

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 albopictus		2.7	10	32			Neg.		Vero cells (8)
Culex quinquefasciatus		2.7	10	32			Neg.		Vero cells (8)
Phlebotomus papatasi	4.5		7	28			Neg.		Vero cells (9)
P. papatasi *		2.0	7	28			5.1		Vero cells (9)
Lutzomyia longipalpis		2.8	7	28			4.0		Vero cells (9)

Virus strain SudAn 754-61 used.

* Gabek Forest was not transovarially transmitted by experimentally infected P. papatasi (9).

Section X - Histopathology

Character of lesions (specify host)
Mouse inoc. ic: diffuse cellular necrosis of cerebrum and marked necrosis and spongiosus of subgranular layers of cerebrum (3).

Inclusion Bodies — Intranuclear

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)
Sudan, Nigeria, Senegal, Dahomey, Central African Republic (6,7)

Suspected (Antibody only detected)
Greece, Egypt, Somalia, Iran (5)

Section XIII - References

1. Tesh, R.B., et al. 1982. Am. J. Trop. Med. Hyg. 31:149-155.
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4. Tesh, R.B. and Modi, G.B. 1983. J. Med. Ent. 20:199-202.
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6. Kemp, G.E., et al. 1974. J. Wildlife Dis. 10:279-293.
7. Rapport Annuel de l'Institut Pasteur de Dakar. 1982.
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Remarks