Virus Name: Simbu	Abbreviation: SIMV

Status
Probable Arbovirus

Select Agent
No

SALS Level
2

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

Other Information

Antigenic Group
Simbu

SECTION I - Full Virus Name and Prototype Number

Prototype Strain Number / Designation
SAAr 53

Accession Number

Original Date Submitted
10/13/1984

Family
Bunyaviridae

Genus
Bunyavirus

Information From
B.M. McIntosh

Address
National Institute for Virology, P/Bag X4, Sandringham, 2131, South Africa

Information Footnote
Revised

Section II - Original Source

Isolated By (name)
M.P. Weinbren, et al. (1)

Isolated at Institute
S. Afr. Inst. Med. Res., Johannesburg

Host Genus
Aedes circumluteolus

Species

Host Age/Stage
Adult

Sex
Female

Isolated From

Isolation Details

Signs and Symptoms of Illness

Arthropod

Time Held Alive before Inoculation
1 day

Collection Method
By hand off vegetation

Collection Date
4/26/1955

Place Collected (Minimum of City, State, Country)
Lake Simbu, Pongola River, Natal, South Africa

Latitude
27° S

Longitude
32° E

Macrohabitat
Tropical, coastal lowland; savannah woodland

Microhabitat

Method of Storage until Inoculated
Held alive

Footnotes

Section III - Method of Isolation

Inoculation Date
4/27/1955

Animal (Details will be in Section 6)
nb mice

Route Inoculated
Intracerebral

Reisolation

Other Reasons
Further isolations from same mosquito at same place in 1957.

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	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 and No	**SMB ext. by sucrose-acetone**	**Goose**
pH Range **6.0-7.0**	pH Optimum	
Temperature Range	Temperature Optimum **Room temp.**	

Remarks
*** Hemagglutination has been described for this virus since the initial negative attempts.**

Serologic Methods Recommended
CF, NT

Footnotes
*** Hemagglutination has been described for this virus since the initial negative attempts.**

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

Virus or Antibody	SIM Virus			SIM Antibody		
	CF (2)	CF (3)	NT (5)	CF (2)	CF (3)	NT (5)
Akabane	8	2	>3.9	2	8	>2.2
Ingwavuma	>512		>3.2	>2048		1.7
Nola	>1024			>2048		
Sabo	32	>32	>2.3	8	2	2.2
Sango	32		>3.6	8		>1.1
Sathuperi	8	16		4	4	>1.5
Shamonda	4		2.7	2		2.8
Shuni	32	4	>2.8	8	8	3.0
Thimiri	>512	128	1.5	>2048		
Manzanilla		>64	>2.6			2.2
Buttonwillow		>2	>2.5			2.0
Oropouche		>32	>2.3			>1.7
Utinga		32	1.5			1.7
Aino			>0.7			>2.6
Mermet			2.8			>2.1

CF results as quotient of homologous/heterologous titers; NT results as difference in LNI from homologous, given in dex.

Prototype virus of Simbu serogroup [4] . Distinct from other serogroup viruses by cross-neutralization testing [15] .

Section VI - Biologic Characteristics

Virus Source (all VERTEBRATE isolates)

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)	MB 12				2	4 mm	6.9* (6)		
LLC-MK2 (CL)					3	6 mm	5.6 (6)		

* 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		2/535 NT	Natal, Sth Africa(7)
Man		2/150 NT	Botswana (8)
Aedes circumluteolus	3		Natal, South Africa (1, 9, 10)
Aedes dalzieli	1		Senegal (11)
Aedes vittatus	2		
Coquillettidia fraseri	1		Cameroun (12)
Aedes cumminsii	1		Centr. Afr. Rep.(12)
Aedes circumluteolus	1		
Eretmapodites chrysogaster group	1		Cameroun (12)
Aedes palpalis group	1		Centr. Afr. Rep.(12)

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)	Ar 53	ic	Death	2-5	7.9
Mice (nb)		ip	Death	3-7	6.9
Mice (nb)		sc			
Mice (wn)		ic	Death	4-9	6.9
Mice (wn)		ip			
Cercopithecus aethiops		sc	Antibody		
rabbit		ic	Antibody		
guinea pig		ic	Antibody		
wild rodents:					
Mystromys albicandatris			Viremia		4.2
Saccostomus campestris			Viremia		5.8

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
Culex quinquefasciatus	Successfully passaged five times through salivary glands (13)								
Aedes aegypti	Successfully passaged five times through salivary glands (13)								
Aedes aegypti	7.0		15	26	hamster		2 infected mosq. failed to transmit; mosq.infection rate 2/4(14)		

Section X - Histopathology

Character of lesions (specify host)

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)
South Africa (1,9,10), Senegal (11), Cameroun (12), Central African Republic (12)

Suspected (Antibody only detected)
Botswana (8)

Section XIII - References

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Remarks