Virus Name: Shokwe		Abbreviation: SHOV
Status **Probable 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
Bunyamwera

SECTION I - Full Virus Name and Prototype Number

Prototype Strain Number / Designation
SAAr 4042

Accession Number

Original Date Submitted
4/3/1985

Family
Bunyavirus

Genus

Information From
B.M. McIntosh

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

Information Footnote
Reviewed by editor

Section II - Original Source

Isolated By (name)
B.M. McIntosh

Isolated at Institute
Johannesburg, South Africa

Host Genus
Aedes cumminsil

Species

Host Age/Stage
adult

Sex
Female

Isolated From

Isolation Details

Signs and Symptoms of Illness

Arthropod

Time Held Alive before Inoculation
12 hours

Collection Method
by hand off ground vegetation

Collection Date
1/11/1962

Place Collected (Minimum of City, State, Country)
Shokwe pan, Ndumu, Natal

Latitude
27° 0' S

Longitude
32° 0' E

Macrohabitat
tropical, coastal lowland, savanna woodland

Microhabitat

Method of Storage until Inoculated
solid carbon dioxide

Footnotes

Section III - Method of Isolation

Inoculation Date
1/31/1962

Animal (Details will be in Section 6)
nb mice

Route Inoculated
intracerebral

Reisolation

Other Reasons

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 + sonication**	**goose**
pH Range	pH Optimum	
5.7-6.8	**6.0**	
Temperature Range	Temperature Optimum	
	room temperature	

Remarks

Serologic Methods Recommended
CF, NT * Antigen sources used in the negative a

Footnotes

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

Virus, antigens, or antisera	Shokwe virus		Shokwe antibody	
	CF (1)	PRNT (2)	CF (1)	PRNT (2)
Bunyamwera	1 [a]	-	2	-
Ilesha	1	32 [a]	2	-
Birao	2	-	1	-
Germiston	32	-	32	-
UgMP 68.0		16		-
Batai		4		-
Tlacotalpan		16		-
Maguari		11		-
Santa Rosa		54		-
Lokern		91		-
Guaroa		-		-
Kairi		-		-
Anhembi		-		-
Sororoca		-		-
Wyeomyia		-		-
Northway		-		-
Tensaw		-		-
Cache Valley		-		-
Main Drain		-		-

[a] Results expressed as quotient of homologous/heterologous titers; - + heterologous PRNT titer of <1:20

Shokwe virus was antigenically classified as a distinct virus type and placed in the Bunyamwera complex of the Bunyamwera serogroup [2] , [3] .

Section VI - Biologic Characteristics

Virus Source (all VERTEBRATE isolates)
blood (M), CNS (LV), pool of liver, spleen, kidney, heart (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)	SAAr 4042 SM 8				3	Plaques	8.2 [b] (2)		

[b] 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 (blood)	1		Ivory Coast (4)
Wild rodents (species unspecified)	4 *		Ivory Coast (4)
Aedes circumluteolus	1		Natal, South Africa (1)
Aedes cumminsii	1		
Mansonia africana	2		
Aedes argenteopunctatus	1		Senegal (5)
Aedes dalzieli	1		
Anopheles brohieri	1		Ivory Coast (4)
Aedes tarsalis group	1		
Aedes dentatus	2		Kenya (4)

* Two isolates from brain and two from a liver, spleen, kidney, heart organ pool.

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 4042, P3-5	ic	death	3	8.0
mice (nb)		ip			
mice (nb)		sc			
mice (wn)		ic	death	4-7	
mice (wn)		ip	antibody		
guinea pig (ad)	Ar 4042, P5	ic	no illness, antibody response		
hamster (ad)		ip	no illness, antibody response		

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)

Inclusion Bodies — Intranuclear

Organs/Tissues Affected

Category of tropism

Section XI - Human Disease

In Nature — Residual — Death
Reported

Subclinical — Overt Disease

Clinical Manifestations

Number of Cases — Category (i.e. febrile illness, etc.)
one

Section XII - Geographic Distribution

Known (Virus detected)

Suspected (Antibody only detected)

Section XIII - References

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2. Hunt, A.R., Calisher, C.H. 1979. Am. J. Trop. Med. Hyg. 28:740-749.
3. Bishop, D.H.L., Shope, R.E. In: Comprehensive Virology, Vol. 14. H. Fraendel-Conrat, R.R. Wagner, editors. Plenum Press, N.Y. 1979. pp. 1-156.
4. Rapport Annuel de l'Institut Pasteur de Dakar. 1980.
5. Cornet, M., et al. 1979. Cah. ORSTOM Ent. Med. Parasitol. 17:149.
6. Shope, R.E. Personal communication. 1982.

Remarks