

Virus Name: Shokwe		Abbreviation: SHOVS
Status Probable Arbovirus	Select Agent No	SALS Level 3
SALS Basis Insufficient 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		
<u>Isolated From</u>	<u>Isolation Details</u>	
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

Hemagglutination 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

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							Growth Without CPE +/- (g)
		CPE			PLAQUES				
		Day (c)	Extent (d)	Titer TCD50/ml (e)	Day (c)	Size (f)	Titer PFU/ml (e)		
Vero (CL)	SAAr 4042 SM 8				3	Plaques	8.2 ^b (2)		

^b Expressed in dex

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)		Transmission 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)	
<u>Inclusion Bodies</u>	<u>Intranuclear</u>
Organs/Tissues Affected	
Category of tropism	

Section XI - Human Disease

In Nature Reported	Residual	Death
Subclinical	Overt Disease	
Clinical Manifestations		
Number of Cases one	Category (i.e. febrile illness, etc.)	

Section XII - Geographic Distribution

Known (Virus detected)
Suspected (Antibody only detected)

Section XIII - References

1. McIntosh, B.M. Unpublished.
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

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