Virus Name: Sango	Abbreviation: SANV

Status
Possible 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
An 5077

Accession Number

Original Date Submitted
11/2/1984

Family
Bunyaviridae

Genus
Bunyavirus

Information From
O.R. Causey (1)

Address
University of Ibadan, Ibadan, Nigeria

Information Footnote
Reviewed by editor

Section II - Original Source

Isolated By (name)
Ibadan Virus Laboratory

Isolated at Institute
University of Ibadan, Nigeria

Host Genus
Cattle

Species

Host Age/Stage
Adult

Sex
Not Answered

Isolated From	Isolation Details
Serum/Plasma	

Signs and Symptoms of Illness

Arthropod

Time Held Alive before Inoculation

Collection Method
At slaughter

Collection Date
4/26/1965

Place Collected (Minimum of City, State, Country)
Ibadan, Nigeria

Latitude
7° 20' N

Longitude
3° 50' E

Macrohabitat

Microhabitat

Method of Storage until Inoculated
Inoculated same day

Footnotes

Section III - Method of Isolation

Inoculation Date
4/26/1965

Animal (Details will be in Section 6)
nb mice

Route Inoculated
Intracerebral

Reisolation
Yes

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) **1:100**	After Treatment Titer **<1.5 dex**	Control Titer **6.3 dex**
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	**Brain: sucrose-acetone + sonication**	**Goose**
pH Range	pH Optimum	
6.4-6.6	**6.4**	
Temperature Range	Temperature Optimum	
	Room temperature	

Remarks

Serologic Methods Recommended
CF, NT

Footnotes

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

Log Neutralizing Index * for Seven Simbu Types with Homologous and Heterologous Immune Mouse Ascitic Fluids

	Antigen						
Mouse Ascitic Fluid	Sango AN5077	Shamonda AN5550	Sabo AN9398	Shuni AN10107	Sathuperi	Yaba 7	Ingwavuma
Sango	>4.0	1.4	1.1	0	0	0	0
Shamonda	0	4.5	0	0	<1.2	<1.8	0
Sabo	0	1.4	>4.8	0	0	0	0
Shuni	0	0	0	>3.6	0	0	0
Sathuperi	0.2	<1.2	<1.2	<1.5	4.4	0.3	0
Yaba 7	0.6	0	<1.9	<1.9	0	3.6	0
Ingwavuma							3.1

* Expressed in dex

Cross-reacts in CF test with immune mouse ascitic fluid for Akabane [2] . Significant cross-CF reaction with Sabo, Shamonda, Shuni, and Sathuperi, but not with Ingwavuma. Sango and Shuni closely related by immunodiffusion test [5] .
Based on NT results, Sango has been classified as a separate virus in the Simbu complex [7] .

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)	
Mouse embryo cells (PC)			CPE (3)						
BHK-21 (CL)			CPE (3)						
Vero (CL)						Plaques (5)			
LLC-MK2 (CL)						Plaques (5)			

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
Human	0/5,820		Nigeria
Cattle	5/2,199	13/20 NT	
Sheep	0/323		
Goat	0/320	12/20 NT	
Swine	0/131		
Dog and cat	0/71		
Horse	0/26		
Camel	0/3		
Insectivora	0/336		

Chiroptera	0/828		
Primate	0/64		
Lepus	0/6		
Rodentia	0/3,084		
Carnivora	0/7		
Aves	0/319		
Reptile	0/56		
Amphibia	0/3		
Mosquito pools	0/420		
Culicoides pools	1/462		
Ixodidae pools	0/4,435		
M. (M.) uniformis	1		Coastal plain, Kenya (4)

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 3-4	ic 0.02	Death	2	8.2
Mice (nb)		ip 0.02	Death	2	
Mice (nb)		sc			
Mice (wn)		ic			
Mice (wn)		ip 0.03	Antibodies		

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
Subclinical	Overt Disease	
Clinical Manifestations		
Number of Cases	Category (i.e. febrile illness, etc.)	

Section XII - Geographic Distribution

Known (Virus detected)
Nigeria, Kenya

Suspected (Antibody only detected)

Section XIII - References

1. Causey, O.R., et al. 1972. Ann. Trop. Med. Parasitol. 66:357-362.
2. Moore, D.L. Personal communication. March 1971.
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4. Stim, T.B. 1969. J. Gen. Virol. 5:329-338.
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6. Kinney, R.M. and Calisher, C.H. 1981. Am. J. Trop. Med. Hyg. 30:1307-1318.

Remarks