Virus Name: Bussuquara	Abbreviation: BSQV

Status
Arbovirus

Select Agent
No

SALS Level
2

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

Other Information

Antigenic Group
B

SECTION I - Full Virus Name and Prototype Number

Prototype Strain Number / Designation
BeAn 4073

Accession Number

Original Date Submitted
1/27/1985

Family
Flaviviridae

Genus
Flavivirus

Information From
Robert E. Shope

Address
Yale Arbovirus Research Unit, New Haven, Connecticut

Information Footnote
Reviewed by editor

Section II - Original Source

Isolated By (name)
Belem Virus Lab. (1)

Isolated at Institute
Belem, Para, Brazil

Host Genus
Alouatta beelzebul Sentinel

Species

Host Age/Stage
Adult

Sex
Female

Isolated From	Isolation Details
Serum/Plasma	

Signs and Symptoms of Illness

Arthropod

Time Held Alive before Inoculation

Collection Method
By syringe from femoral vein

Collection Date
3/2/1956

Place Collected (Minimum of City, State, Country)
Instituto Agronomico do Norte, Brazil

Latitude
2° S

Longitude
48° W

Macrohabitat
Old secondary growth forest

Microhabitat
In cage, 4 to 5 meters from ground

Method of Storage until Inoculated
Not stored

Footnotes

Section III - Method of Isolation

Inoculation Date
3/2/1956

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)	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 acetone-ether; sucrose-acetone; crude + protamine**	**Goose**
pH Range **6.4-7.2**	pH Optimum **6.8**	
Temperature Range	Temperature Optimum **27dC**	

Remarks

Serologic Methods Recommended
HI, CF, NT

Footnotes

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

Group B virus, see References [1] and [14] for antigenic relationships.

Bussuquara virus was not placed in any of the specific complexes comprising group B because it did not show a close antigenic relationship to any of the other flaviviruses with which it was compared by NT [14] .

Section VI - Biologic Characteristics

Virus Source (all VERTEBRATE isolates)
Blood (LV)

Lab Methods of Virus Recovery (ALL ISOLATIONS)
Newborn mice, chick embryos, monkey kidney and primary chick embryo cell cultures

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)	
Duck kidney (PC)						Plaques (3)			
BHK-21 (CL)					3-4	Plaques	5.1-6.4* (5)		
Vero (CL)					3	1.5-2.0mm	8.3 (5)		
MA-104 (CL)					6-7	2-3 mm	4.3-5.7 (5)		
HeLa (CL)			CPE (7)						
Chick embryo (PC)						Plaques (9)			
Turkey embryo (PC)						Plaques (9)			
Green monkey kidney (CL)						Plaques (9)			

* 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	1		Panama (11)
Man		46%/383 NT	Central Panama
Sentinel Alouatta	1		Para, Brazil
Sentinel mouse	2		Panama (12)
Sentinel mouse	16/16,315		Para, Brazil
Proechimys guyannensis (Isolations were from the blood in most cases.)	29		
Culex sp.	7		
Culex (Mel) sp.	2		
Culex (Mel) taeniopus	1		
Cx vomerifer	1		
Culex B1 (=B22)	9		
Mansonia titillans	1		
Cq venezuelensis	1		
Culex spp.	2		Colombia (4)
Culex crybda	1		Panama (12)
Trichoprosopon sp.	1		Panama

No HI or NT antibody found in humans in Brazil. Marked annual seasonal HI and NT antibody rise in Proechimys until 75% or more have antibody in Brazil(2).

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)	BeAn 4116	ic 0.02	Death	4.8	10.0
Mice (nb)		ip 0.02	Viremia, death	5.0	10.2
Mice (nb)		sc			
Mice (wn)		ic 0.03	Viremia, death	6.3	9.0
Mice (wn)		ip 0.03	Antibody		
hamsters (nb,ad)		ip	Virus in organs (6),antibody (10)		
Proechimys (ad)		ip	Viremia, antibody		
chicks		iv	Viremia (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
Ae aegypti, Cx quinquefasciatus:	Following parenteral inoculation, high titered virus content detected in salivary glands after serial passages (8)								
Culex B1 (=B22) infected in nature; transmitted to mice on three occasions (13).									

Section X - Histopathology

Character of lesions (specify host)
Alouatta beelzebul: "Lesions (in liver) compatible with a diagnosis of yellow fever". (1)

Inclusion Bodies — Intranuclear

Organs/Tissues Affected

Category of tropism

Section XI - Human Disease

In Nature — Residual — Death
Reported

Subclinical — Overt Disease

Clinical Manifestations
Fever (R), headache (S), arthralgia (R)

Number of Cases
1

Category (i.e. febrile illness, etc.)
Febrile illness

Section XII - Geographic Distribution

Known (Virus detected)
Brazil, Colombia, Panama

Suspected (Antibody only detected)

Section XIII - References

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Remarks