

Virus Name: Catu	Abbreviation: CATUV	
Status <b>Arbovirus</b>	Select Agent <b>No</b>	SALS Level <b>2</b>
SALS Basis <b>Results of SALS surveys and information from the Catalogue.</b>		
Other Information		
Antigenic Group <b>Guama</b>		

#### SECTION I - Full Virus Name and Prototype Number

Prototype Strain Number / Designation <b>BeH 151</b>	Accession Number	Original Date Submitted <b>1/27/1985</b>
Family <b>Bunyaviridae</b>	Genus <b>Bunyavirus</b>	
Information From <b>Robert E. Shope</b>	Address <b>Yale Arbovirus Research Unit, New Haven, Connecticut</b>	
Information Footnote <b>Reviewed by editor</b>		

#### Section II - Original Source

Isolated By (name) <b>Belem Virus Laboratory</b>	Isolated at Institute <b>Belem, Para, Brazil</b>	
Host Genus <b>Man (1)</b>	Species	Host Age/Stage <b>17 years</b>
Sex <b>Male</b>		
<u>Isolated From</u> <u>Isolation Details</u>		
<b>Serum/Plasma</b>		
Signs and Symptoms of Illness <b>Fever, headache, muscular aches during 5 days</b>	Arthropod	
Time Held Alive before Inoculation		
Collection Method <b>Syringe, arm vein</b>	Collection Date <b>2/7/1955</b>	
Place Collected (Minimum of City, State, Country) <b>Oriboca plantation forest, Brazil</b>		
Latitude <b>2° S</b>	Longitude <b>48° W</b>	
Macrohabitat <b>Virgin forest</b>	Microhabitat	Method of Storage until Inoculated
Footnotes		

### Section III - Method of Isolation

Inoculation Date  
2/7/1955

Animal (Details will be in Section 6)  
**nb mice**

Route Inoculated  
**Intracerebral**

Reisolation  
**Not tried**

Other Reasons

Homologous Antibody Formation by Source Animal

**Yes**

Test(s) Used  
**NT**

Footnotes

### Section IV - Virus Properties

Physicochemical  
**RNA**

Pieces (number of genome segments)      Infectivity  
**Yes (14)**

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)  
**1:5**      After Treatment Titer  
**<2.6 dex**

Control Titer  
**>6.5 dex**

Lipid Solvent (chloroform)      After Treatment Titer

Control Titer

Lipid Solvent (deoxycholate)      After Treatment Titer

Control Titer

Other (formalin, radiation)

#### Virion Morphology

Shape      Dimensions  
**95 nm**

Mean  
nm      Range  
nm

Measurement Method  
**Electron microscopy (13)**      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	SMB, serum ext. by sucrose-acetone; acetone	Goose
pH Range	pH Optimum	
5.7-6.4	6.0	
Temperature Range	Temperature Optimum	
	27dC	
Remarks		
Serologic Methods Recommended		
HI, CF, NT		
Footnotes		

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

Belongs to Guama Group; for antigenic relationship see Reference [2]. In addition, SIRACA has antigenically classified Catu virus as a distinct virus type, and has placed it in the Catu complex, one of five complexes comprising the Guama serogroup [16].

## Section VI - Biologic Characteristics

Virus Source (all VERTEBRATE isolates)  
Blood (M)(LV), pooled liver, spleen, kidney (LV)

Lab Methods of Virus Recovery (ALL ISOLATIONS)  
Newborn mice

Cell system (a)	Virus passage history (b)	Evidence of Infection						Growth Without CPE	
		CPE			PLAQUES				
		Day (c)	Extent (d)	Titer TCD50/ml (e)	Day (c)	Size (f)	Titer PFU/ml (e)		
Mouse embryo(PC)	P-4				9-19	Plaques	6.3* (8)		
BHK-21 (CL)					5	0.2-0.6 mm	6.4 (9)		
Vero (CL)					6	1-2 mm	5.3 (9)		
MA-104 (CL)					8	3-3.5 mm (9)			
GMK (CL)		CPE (8)							
HeLa		CPE	6.5* (10)						

\* 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	8		Para, Brazil
Man	1		Trinidad (15, 17)
Sentinel Cebus	8		Para, Brazil
Sentinel mouse	298/16,315		Para and Amapa, Brazil
Sentinel mouse	7		Bush Bush, Trinidad(4)
Nectomys squamipes	3		Para, Brazil
Proechimys guyannensis	15		
Proechimys guyannensis	1		Bush Bush, Trinidad(5)
Oryzomys laticeps	2		Bush Bush, Trinidad(4)
Oryzomys capito	22		Para and Amapa, Brazil
Didelphis marsupialis	2		Para, Brazil
Molossus obscurus (bat)	1		Amapa, Brazil

Mosquitoes: *Culex portesi* 39 Belem, 38 Trinidad (4), 3 French Guiana (6); all other *Culex* 8 Belem, 4 Trinidad; *Anopheles nimbus* 1, Amapa, Brazil.

HI antibody found in 45% Proechimys, 36% Oryzomys, 39% Nectomys, 15% Didelphis, 15% Philander, 4% Marmosa, 3% Caluromys, 67% Metachirus in Para, Brazil.

**Section VIII - Susceptibility to Experimental Infection (include viremia)**

<b>Experimental host and age</b>	<b>Passage history and strain</b>	<b>Inoculation Route-Dose</b>	<b>Evidence of infection</b>	<b>AST (days)</b>	<b>Titer log10/ml</b>	
Mice (nb)	P-7	ic 0.02	Death	2.8	8.1	
Mice (nb)		ip 0.02	Death, viremia	2.7	8.2	
Mice (nb)		sc				
Mice (wn)		ic 0.03	Some die			
Mice (wn)		ip 0.03	Antibody			
hamsters (ad)		ic,sc	Antibody (7)			
Oryzomys laticeps (ad)		sc	Viremia, antibody (5)			
Zygodontomys (ad)		sc	Viremia, antibody (5)			
chicks		iv	Viremia (11)			

**Section IX - Experimental Arthropod Infection and Transmission**

<b>Arthropod species &amp; virus source(a)</b>	<b>Method of Infection log10/ml (b)</b>		<b>Incubation period (c)</b>		<b>Transmision by bite (d)</b>		<b>Assay of arthropod, log10/ml (e)</b>		
	<b>Feeding</b>	<b>Injected</b>	<b>Days</b>	<b>°C</b>	<b>Host</b>	<b>Ratio</b>	<b>Whole</b>	<b>Organ</b>	<b>System</b>

Aedes aegypti, An quadrimaculatus, parenterally inoculated; high virus titer in salivary glands after several passages; titer = + 4 dex/ml (11).

Culex portesi fed on viremic Zygodontomys transmitted after 14 days to another Zygodontomys (12).

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**Section X - Histopathology**

Character of lesions (specify host)

ad, nb mice; ic and ip: spongy lesions of brain with mononuclear perivascular infiltration (3)

Inclusion BodiesIntranuclear

Organs/Tissues Affected

Brain (LV)

Category of tropism

Neurotropic

**Section XI - Human Disease**

In Nature Reported	Residual	Death
Subclinical Reported	Overt Disease Reported	
Clinical Manifestations		
Fever (S), headache (S), myalgia (S)		
Number of Cases	Category (i.e. febrile illness, etc.)	
	Febrile illness	

**Section XII - Geographic Distribution**Known (Virus detected)  
**Brazil, Trinidad, French Guiana**

Suspected (Antibody only detected)

**Section XIII - References**

1. Causey, O.R., et al. 1961. Am. J. Trop. Med. Hyg. 10:227-249.
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14. Lomonosovo, N.N. and Fadeeva, L.L. 1974. Vop. Virusol. 6:719-721.
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17. Corniou, B., et al. 1972. Trop. Geo. Med. 24:162-167.
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**Remarks**