

Virus Name: Acara		Abbreviation: ACAV
Status Probable Arbovirus	Select Agent No	SALS Level 2
SALS Basis Results of SALS surveys and information from the Catalogue.		
Other Information		
Antigenic Group Capim		

SECTION I - Full Virus Name and Prototype Number

Prototype Strain Number / Designation BeAn 27639	Accession Number	Original Date Submitted 2/27/1985
Family Bunyaviridae	Genus Bunyavirus	
Information From Belem Virus Laboratory	Address Belem Virus Laboratory, Instituto Evandro Changas, Belem, Para, Brazil	
Information Footnote Reviewed by editor		

Section II - Original Source

Isolated By (name) Belem Virus Laboratory	Isolated at Institute Belem, Para, Brazil	
Host Genus Swiss mouse	Species	Host Age/Stage 3 Days
Sex Not Answered		
<u>Isolated From</u>	<u>Isolation Details</u>	
Organs/Tissues	Brain and liver pool	
Signs and Symptoms of Illness Death	Arthropod	
Time Held Alive before Inoculation		
Collection Method Exposed 24 hrs.	Collection Date 2/22/1961	
Place Collected (Minimum of City, State, Country) Instituto Agronomico do Norte Forest, Brazil		
Latitude 2° S	Longitude 48° W	
Macrohabitat Secondary growth forest	Microhabitat One meter from ground in wire cage under hood	Method of Storage until Inoculated None
Footnotes		

Section III - Method of Isolation

Inoculation Date
2/22/1961

Animal (Details will be in Section 6)
nb mice

Route Inoculated Intracerebral	Reisolation Not tried
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Other Reasons
Same virus from four other exposed siblings

Homologous Antibody Formation by Source Animal
Not tested

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) 1:1000	After Treatment Titer 2.3 dex	Control Titer 5.3 dex
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

Yes

Antigen Source

**SMB; serum ext. by sucrose-acetone;
acetone**

Erythrocytes (species used)

Goose

pH Range

6.0 - 7.0

pH Optimum

Temperature Range

Temperature Optimum

4° C

Remarks

Serologic Methods Recommended

CF, HI, NT

Footnotes

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

Acara antigen and immune serum failed to react in CF tests with a large number of known arboviruses as shown in published Catalogue ([5]). Acara antiserum failed to inhibit HA of 30 arboviruses ([5]). Acara related by HI and/or CF to members of Capim group as follows:

Immune Serum	Antigen of Registered Virus				Immune Serum of Registered Virus				
	HI		CF		HI		CF		
	Ht/Ho	Index	Ht/Ho	Index	Antigen	Ht/Ho	Index	Ht/Ho	Index
Capim	0/80	0	0/64	0	Capim	0/40	0	0/16	0
Guajar	0/80	0	0/32	0	Guajara	0/40	0	0/16	0
BeAn 20076 *	0/80	0	0/32	0	BeAn 20076	0/40	0	0/16	0
Gamboa †	0/320	0		Gamboa	0/20	0			
Benfica	0/80	0	16/32	1/2	Benfica	0/40	0	8/16	1/2
Benevies	0/40	0	16/32	1/2	Benevide	0/40	0	16/16	1/1
Morich	40/160	1/4	0/256	0	Moriche	40/40	1/1	0/16	0
Juan Diaz †	10/640	1/64		Juan Diaz	0/20	0	0/8	0	

* Close to Bushbush

† Tests done by G. Justines

NOTE: MARU 8620 from a sentinel mouse in Panama is very close to Acara.

SIRACA has antigenically classified Acara virus as a distinct virus type and placed it in the Acara complex, one of five complexes comprising the Capim serogroup ([6]).

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 +/- (g)
		Day (c)	Extent (d)	Titer TCD50/ml (e)	Day (c)	Size (f)	Titer PFU/ml (e)	
Chick embryo (PC)	P-2					Plaques	(inconsistent)	(2)
Vero (CL)					6	1mm	5.7 **	
LLC-MK2 (CL)					3	3mm	7.9(3)	

** Expressed in dex

Vertebrate (species and organ) and arthropod	No. isolations/No. tested	No. with antibody/No. tested Test used	Country and region
Sentinel mice	29/16,315		Para, Brazil (1)
Sentinel mice	1		Panama
Nectomys squamipes (blood)	2	2/8 NT	Para, Brazil (1)
Proechimys		19/172 NT	
Caluromys		1/32 NT	
Oryzomys		3/76 NT	
Philander		1/3 NT	
Metachirus		1/8 NT	
Didelphis		1/75 NT	
Marmosa		2/48 NT	
Culex spp.	2		
Culex B17	1		
Culex amazonensis	1		Panama

Section VIII - Susceptibility to Experimental Infection (include viremia)

Experimental host and age	Passage history and strain	Inoculation Route-Dose	Evidence of infection	AST	Titer
				(days)	log10/ml
Mice (nb)	P-3	ic 0.02	Death	3.7	7.0
Mice (nb)		ip 0.02	Death	7.5	
Mice (nb)		sc			
Mice (wn)		ic 0.03	Antibody		
Mice (wn)		ip 0.03	Antibody		
hamsters (ad)		ic	Death		

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
Ae aegypti :	virus carried through 8 serial salivary gland passages by parenteral inoculation (4).								
An quadrimaculatus :	virus carried through 2 serial salivary gland passages by parenteral inoculation (4).								
Cx quinquefasciatus :	virus carried through 4 serial salivary gland passages by parenteral inoculation (4).								

