

<b>Virus Name: Aroa</b>		<b>Abbreviation: AROAV</b>
Status <b>Possible 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>B</b>		

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

Prototype Strain Number / Designation <b>Maracay 01809</b>	Accession Number	Original Date Submitted <b>8/31/1984</b>
Family <b>Flaviviridae</b>	Genus <b>Flavivirus</b>	
Information From <b>Julieta de Siger</b>	Address <b>Instituto de Investigaciones Veterinarias, Apartado 70, Maracay, Aragua, Venezuela</b>	
Information Footnote <b>Reviewed by editor</b>		

**Section II - Original Source**

Isolated By (name) <b>Seccion de Arbovirus</b>	Isolated at Institute <b>Maracay, Venezuela</b>	
Host Genus <b>Hamster (Cricetus auratus)</b>	Species	Host Age/Stage <b>Adult</b>
Sex <b>Male</b>		
<u>Isolated From</u>	<u>Isolation Details</u>	
<b>Organs/Tissues</b>	<b>Brain</b>	
Signs and Symptoms of Illness	Arthropod	
Time Held Alive before Inoculation		
Collection Method	Collection Date <b>12/13/1972</b>	
Place Collected (Minimum of City, State, Country) <b>Vicinity of Aroa river, Venezuela</b>		
Latitude <b>10° 39' N</b>	Longitude <b>68° 28' W</b>	
Macrohabitat <b>Tropical rain forest (&lt;100 meters elevation)</b>	Microhabitat <b>1m above ground level. Hamsters exposed from 4 to 8 December 1972.</b>	Method of Storage until Inoculated <b>Whole animal at -70C, 26 months; then brain suspension at -70C for 8 months.</b>
Footnotes		

**Section III - Method of Isolation**

Inoculation Date  
**10/21/1975**

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

Route Inoculated <b>ic and ip</b>	Reisolation <b>No</b>
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Other Reasons  
**\*When attempted three years after isolation. No other group B viruses in laboratory.**

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

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**Hemagglutination**

Hemagglutination

Antigen Source

Erythrocytes (species used)

**Yes**

**SMB ext. by sucrose-acetone**

**Goose**

pH Range

pH Optimum

**6.0-7.2**

**6.8**

Temperature Range

Temperature Optimum

Remarks

Serologic Methods Recommended

**CF, HI**

Footnotes

Initial HI and CF tests performed in Maracay with nb mouse brain antigen (sucrose-acetone) and several grouping immune ascitic fluids indicated that Aroa is a group B virus. Further CF testing at YARU indicated that Aroa immune serum (2 injections) homologous titer was 64 [1]. Reactions with dilutions 1:4 and 1:16 of antigens for all the group B viruses were either negative or 8, with the exception of Alfuy, Bussuquara, and Rocio, with which the titer was 32. Additional CF results, obtained also in YARU, were as follows:

Antigen	Serum				Antigen	Serum	
	Aroa	Bussuquara	Alfuy	Rocio		Aroa	Bussuquara
Aroa	128/>256 <sup>a</sup>	8/8	8/8	8/8	Aroa	128/1024	32/512
Bussuquara	32/64	128/128	8/8		Bussuquara	64/128	256/256
Alfuy	8/64	8/8	256/>256		Control	0	0
Rocio	16/16			512/64			

<sup>a</sup> Antibody titer/antigen titer

It is concluded that, by CF, Aroa is a new virus of group B and that its closest relative is Bussuquara [1].

In addition, Aroa antigen and antibody were tested by CF against reagents for the following 21 vector-unassociated flaviviruses: Apoi (homologous antibody titer=1024), Saboya (4096), Sokoluk (2048), Israel turkey meningoencephalitis (2048), Batu Cave (1024), Phnom Penh bat (1024), Carey Island (512), Cowbone Ridge (64), Jutiapa (256), Modoc (2048), San Perlita (2048), Sal Vieja (2048), MA-387-72 (1024), Dakar bat (32), BP-111(45), Entebbe bat (1024), Koutango (128), MML (64), Negishi (128), Rio Bravo (256), Tamana bat (128). A close relationship was not detected with any of the vector-unassociated flaviviruses [2]. Serum dilution plaque-reduction neutralization tests (SDPRNT) indicated that Aroa and Bussuquara viruses were distinguishable both ways as shown below [3].

Virus	Antibody to:	
	BSQ	AROA
BSQ	640 <sup>b</sup>	<40
AROA	80	> 10240

<sup>b</sup> Reciprocal of antibody dilution giving 90% plaque reduction.

**Section VI - Biologic Characteristics**

Virus Source (all VERTEBRATE isolates)

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)	
Vero (CL)	P5SM1				9		5.8 <sup>c</sup> (2)	
LLC-MK2 (CL)					6		6.6 (2)	
DE (PC)					6		7.0(2)	

<sup>c</sup> 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. tsted Test used	Country and region
Sentinel hamster (brain)	1/84		Vicinity of Aroa river, Yumare, Venezuela



**Section XII - Geographic Distribution**

Known (Virus detected)

**Venezuela**

Suspected (Antibody only detected)

**Section XIII - References**

1. Casals, J. Personal communication. 1978.
2. Wesley, I.V. and Calisher, C.H. 1982. Am. J. Trop. Med. Hyg. 31:1273-1284.
3. Laznick, J. and Calisher, C.H. Personal communication. 1980.

**Remarks**