

Virus Name: Chaco		Abbreviation: CHOV
Status Possible Arbovirus	Select Agent No	SALS Level 2
SALS Basis Results of SALS surveys and information from the Catalogue.		
Other Information		
Antigenic Group Timbo		

SECTION I - Full Virus Name and Prototype Number

Prototype Strain Number / Designation BeAn 42217	Accession Number	Original Date Submitted 2/27/1985
Family Rhabdoviridae	Genus	
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 Laboratory (1)	Isolated at Institute Belem, Para, Brazil	
Host Genus Ameiva ameiva ameiva	Species	Host Age/Stage Adult
Sex Not Answered		
<u>Isolated From</u>	<u>Isolation Details</u>	
Organs/Tissues	Heart and liver pool from two lizards	
Signs and Symptoms of Illness None observed	Arthropod	
Time Held Alive before Inoculation		
Collection Method Hand caught in noose	Collection Date 5/8/1962	
Place Collected (Minimum of City, State, Country) Instituto Agronomico do Norte forest, Brazil		
Latitude 1° 28' S	Longitude 48° 27' W	
Macrohabitat Secondary growth forest	Microhabitat Ground level	Method of Storage until Inoculated Not stored
Footnotes		

Section III - Method of Isolation

Inoculation Date 5/8/1962	
Animal (Details will be in Section 6) nb mice	
Route Inoculated Intracerebral	Reisolation Yes
Other Reasons	
Homologous Antibody Formation by <u>Source Animal</u> 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)	
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<u>Stability of Infectivity (effects)</u>		
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 <1.6 dex	Control Titer 4.4 dex
Other (formalin, radiation)		
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<u>Virion Morphology</u>		
Shape Bullet-shaped particles (3)	Dimensions	
Mean nm	Range nm	
Measurement Method Electron microscopy (3)	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)

No

SMB ext. by sucrose-acetone

Goose

pH Range

pH Optimum

Temperature Range

Temperature Optimum

Remarks

Serologic Methods Recommended

CF, NT

Footnotes

Chaco antigen did not react in CF testing with: Mucambo, EEE, Mayaro, Una, Aura, Pixuna, YF, Ilheus, Bussuquara, SLE, Oriboca, Murutucu, Apeu, Caraparu, Marituba, Itaqui, Nepuyo, Catu, Guama, Moju, Capim, Guajara, Bushbush, Mirim, Maguari, Kairi, Guaroa, Tucunduba, Taiassui, Sororoca, Melao, Oropouche, Icoaraci, Tacaiuma, Turlock, Cocal, Lukuni, Candiru, Piry, Pacui, Acara, Irituia, Jurona, Anhangá, Naples, Chagres, Germiston, Bunyamwera, Batai, Ilesha, California, trivittatus, Tahyna, Lumbo, Sathuperi, Akabane, Ingwavuma, Navarro, Manzanilla, EHD-NJ, Trinita, Ieri, Aruac, Tacaribe, Hart Park, Colorado tick fever, Anopheles A and B, Panama J55, B535, Cas Cas, Hughes, Tete, Nyamanini, Witwatersrand, Quarantil, Sicilian, Bwamba, Wad Medani, Mossuril, Wongal, Mapputta, Bakau, Ketapang, Nodamura, Tsuruse, Ganjam, Lebombo, K-622, Chenuda, VSNJ, Simbu, Wanowrie, Palyam.

Chaco serum (hyperimmune, 16) did not react in CF testing with: Jurona, Marco, Anhangá.

Chaco serum did not inhibit hemagglutination of: EEE, Mucambo, Aura, Una, Mayaro, Pixuna, YF, Ilheus, Bussuquara, SLE, Oriboca, Murutucu, Caraparu, Guama, Maguari, Guaroa, Icoaraci, Tacaiuma, Turlock, Candiru, Anhangá.

CF relationship demonstrated with Timbo as follows:

Antigen	Serum	
	Timbo	Chaco
Timbo	64/64 *	16/16
Chaco	8/>64	64/> 64
Normal brain	0/0	0/0

* Serum over antigen

The recently registered Sena Madureira virus was shown to be related to Chaco and Timbo viruses by CF; thus the Timbo serogroup now consists of three members (see Sena Madureira registration card).

Virus Source (all VERTEBRATE isolates)
Heart and liver pool (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)		
HeLa (CL)	SMB 4		No CPE (2)						
BHK-21 (CL)		5-6	+ CPE*	4.8**					+ (4)
E6 (CL)		6	CPE	5.0 (4)					
C6/36 (CL)		6	No CPE	5.0					+ (4)
Vero (CL)					8	Plaques (4)			

* Production of CPE or lack of, determined at 25C.

** Expressed in dex

Vertebrate (species and organ) and arthropod	No. isolations/No. tested	No. with antibody/No. tested Test used	Country and region
Ameiva ameiva ameiva	3/1,526		Para, Brazil
Kentropyx calcaratus	1/4	0/40 CF	
Other reptiles	0/4,396		
Birds	0/6,000		
Amphibians	0/42		
Man	0/2,950		
Rodents	0/11,043		
Marsupials	0/1,950		
Monkeys	0/87		
Bats	0/878		
Edentates	0/127		
Carnivores	0/32		
Horses and cattle	0/185		
Arthropods	0/20,758 pools		Amazon region, Brazil
Sentinel mice	0/16,315		

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 log ₁₀ /ml
Mice (nb)	P-2	ic 0.02	Death	7.0	6.1
Mice (nb)	P-5	ip 0.02	2/6 dead		
Mice (nb)		sc			
Mice (wn)		ic 0.03	Antibody		
Mice (wn)		ip 0.03	None		

Section IX - Experimental Arthropod Infection and Transmission

Arthropod species & virus source(a)	Method of Infection log ₁₀ /ml (b)		Incubation period (c)		Transmission by bite (d)		Assay of arthropod, log ₁₀ /ml (e)		
	Feeding	Injected	Days	°C	Host	Ratio	Whole	Organ	System

Section X - Histopathology

Character of lesions (specify host)

SM: encephalitis only (L.B. Dias)

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) Brazil
Suspected (Antibody only detected)

Section XIII - References

1. Causey, O.R., et al. 1966. Am. J. Trop. Med. Hyg. 15:239-243.
2. Buckley, S.M. 1964. Proc. Soc. Exp. Biol. Med. 116:354-358.
3. Murphy, F.A. Personal communication.
4. Kerschner, J. Personal communication. 1983.

Remarks

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