

<b>Virus Name: Changuinola</b>		<b>Abbreviation: CGLV</b>
Status <b>Probable 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>Changuinola</b>		

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

Prototype Strain Number / Designation <b>BT-436</b>	Accession Number	Original Date Submitted <b>2/5/1985</b>
Family <b>Reoviridae</b>	Genus <b>Orbivirus</b>	
Information From <b>Alexis Shelokov</b>	Address <b>National Institutes of Health, Bethesda, Maryland, USA</b>	
Information Footnote <b>Reviewed by editor</b>		

**Section II - Original Source**

Isolated By (name) <b>Staff of Middle America Research Unit</b>	Isolated at Institute <b>Canal Zone</b>	
Host Genus <b>Lutzomyia sp.</b>	Species	Host Age/Stage <b>Adult</b>
Sex <b>Female</b>		
<u>Isolated From</u>	<u>Isolation Details</u>	
Signs and Symptoms of Illness	Arthropod	
Time Held Alive before Inoculation		
Collection Method <b>Human bait</b>	Collection Date <b>1/5/1960</b>	
Place Collected (Minimum of City, State, Country) <b>Near Almirante, Bocas del Toro, Panama</b>		
Latitude <b>9° N</b>	Longitude <b>82° W</b>	
Macrohabitat <b>Tropical rain forest</b>	Microhabitat <b>Outdoors</b>	Method of Storage until Inoculated <b>Frozen at -50dC</b>
Footnotes		

**Section III - Method of Isolation**

Inoculation Date  
**1/27/1960**

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

Route Inoculated  
**ic and ip**

Reisolation  
**No**

Other Reasons

**Five other isolates of this virus from same arthropod in same location over 18 mo. period. No similar isolate from mosq. pools in same study**

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)  
**Labile at pH 3.0 (4)**

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)

**Relatively resistant to lipid solvents and sodium deoxycholate(4).**

**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 <b>No</b>	Antigen Source <b>SMB ext. by acetone-ether + protamine</b>	Erythrocytes (species used)
-------------------------------	--	-----------------------------

pH Range	pH Optimum
----------	------------

Temperature Range	Temperature Optimum
-------------------	---------------------

Remarks

Serologic Methods Recommended  
**CF, NT**

Footnotes

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

Closely related to or identical with five other virus strains isolated from Panamanian phlebotomines (MARU BT-104, BT-766, BT-2164, BT-2365, BT-2380) collected by Gorgas Memorial Laboratory in the same ecological niche.

Not related to Chagres (JW-10), VS-Indiana and VS-New Jersey, Una, EEE, Mayaro, Melao, Wyeomyia, Guaroa, Guama, SLE, Ilheus and YF isolates from Panama.

Relationship to Irituia, a Brazilian virus, first established by Drs. Gilberta Bensabath and Evert Bruckner. See Irituia card for CF data.

See Reference [7] for recent CF and NT relationships of Changuinola serogroup viruses including prototype Changuinola virus.

**Section VI - Biologic Characteristics**

Virus Source (all VERTEBRATE isolates)  
**Blood (M)**

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)	P-2	5	CPE	Variable				
Vero (CL)					6	1 mm	4.3* (5)	
LLC-MK2 (CL)					8	1 mm	5.0 (5)	
C6/36 (CL)	SM 13 V3		No CPE	6.7*				+ (7)
LL-5 (CL)			CPE	6.4 (7)				

\* 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
Phlebotomines	>10		Panama
Man (mosquito catcher)	1		Panama (3)

15% of 438 animal sera tested from area around Gatun Lake, Rep. of Panama, were positive by NT and CF. Of arboreal mammals, 21% were positive. Of terrestrial animals, 7% were positive, all of which were Didelphis (opossums). None of 100 strictly terrestrial mammals showed evidence of infection (6).

**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 <sub>10</sub> /ml
Mice (nb)		ic 0.02	Illness and death	3	5.4
Mice (nb)		ip 0.04	None		
Mice (nb)		sc			
Mice (wn)		ic 0.03	None		
Mice (wn)		ip 0.06	None		
hamsters(nb)	SM 13, V 3	ic 0.02	Death (7)	7.3	

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

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

**Section X - Histopathology**

Character of lesions (specify host)

Inclusion Bodies

Intranuclear

Organs/Tissues Affected

Category of tropism

**Section XI - Human Disease**

In Nature  
**Reported**

Residual

Death

Subclinical

Overt Disease

Clinical Manifestations

Number of Cases

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

**Section XII - Geographic Distribution**

Known (Virus detected)  
**Panama**

Suspected (Antibody only detected)

### Section XIII - References

1. Peralta, P.H., et al. Fed. Proc. v20, No. 1, March 1961, p. 436.
2. Shelokov, A., et al. J.C.I., v42, No. 6, June 1963.
3. Galindo, P. Personal communication.\*
4. Borden, E.C., et al. 1971. J. Gen. Virol. 13:261-271.
5. Stim, T.B. 1969. J. Gen. Virol. 5:329-338.
6. Gorgas Mem. Laboratory, Panama. 1969. Unpublished data.
7. Travassos da Rosa, A.P.A., et al. 1984. Intervirology 21:38-49. Case reported was a mosquito catcher. Virus isolated from blood followed by rise of CF antibodies.

### Remarks

**Case reported was a mosquito catcher. Virus isolated from blood followed by rise of CF antibodies.**