Virus Name: Tonate	Abbreviation: TONV

Status
Probable Arbovirus

Select Agent
No

SALS Level
3

SALS Basis
Isufficient experience with virus; i.e., experience factor from SALS surveys was less than 500 in laboratory facilities with low biocontainment.

Other Information
USDA Permit Required, Hepa Filtration, Vaccination Recommended

Antigenic Group
A

SECTION I - Full Virus Name and Prototype Number

Prototype Strain Number / Designation
CaAn 410d

Accession Number

Original Date Submitted
10/10/1984

Family
Togaviridae

Genus
Alphavirus

Information From
J.P Digoutte

Address
Institut Pasteur, B.P. 304, Cayenne, Guyane Francaise

Information Footnote
Reviewed by editor

Section II - Original Source

Isolated By (name)
J.P. Digoutte and P. Fauran

Isolated at Institute
Institut Pasteur Cayenne

Host Genus
Psarocolius decumanus (1)

Species

Host Age/Stage

Sex
Not Answered

Isolated From	Isolation Details
Organs/Tissues	

Signs and Symptoms of Illness

Arthropod

Time Held Alive before Inoculation

Collection Method
Collected by net

Collection Date
1/16/1973

Place Collected (Minimum of City, State, Country)
Tonate, French Guiana

Latitude
5° 1' N

Longitude
52° 29' W

Macrohabitat
Forest savannah mosaic, twenty kilometers west of Cayenne

Microhabitat

Method of Storage until Inoculated
Revco at -65dC

Footnotes

Section III - Method of Isolation

Inoculation Date
3/19/1973

Animal (Details will be in Section 6)
nb mice

Route Inoculated
ic and ip

Reisolation
Yes

Other Reasons
First virus of thistype in the 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) **5%**	After Treatment Titer **<2 dex**	Control Titer **9 dex**
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	

Hemagglutination

Hemaggiutination	Antigen Source	Erythrocytes (species used)
Yes	**SMB ext. by sucrose-acetone**	**Goose**
pH Range	pH Optimum	
6.0-6.6	**6.4**	
Temperature Range	Temperature Optimum	
	RT	

Remarks

Serologic Methods Recommended
HI, CF, NT

Footnotes

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

CF test - homologous titer = 256/16. Institut Pasteur Cayenne:

CaAn 410d gives positive results with viruses of VEE complex [2] .

Complement-fixation test:

	Antigens						
Asciticfluid	Tonate CaAn 410d	Mucambo BeAn 8007	Pixuna BeAr 35645	Cabassou CaAr 508	VEE ID 3880	VEE IE Mena II	Everglades Fe 37 C
Tonate	256/16 [a]	16/16	<8/<8	16/32	16/32	16/64	16/64
Mucambo	32/16	128/16					
Pixuna	<8/<8		64/64				
Cabassou	64/16			64/64			
VEE ID	<8/<8				16/128		
VEE IE	<8/<8					16/64	
Everglades	64/16						256/64

[a] Maximum titer of antiserum/optimum titer of antigen

Neutralization test:

	Virus	
Ascitic fluid	Tonate CaAn 410d	Mucambo BeAn 8007
Tonate	5.5 [b]	3.5
Mucambo	1.5	5.2

[b] LNI in dex

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	
		Day (c)	Extent (d)	Titer TCD50/ml (e)	Day (c)	Size (f)	Titer PFU/ml (e)	+/- (g)	
Vero (CL)	3rd				4	3-4 mm			

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 (blood)	2		French Guiana
Sentinel mouse (brains)	44/1450		
Culex portesi	51		
Culex zeteki	2		
Culex spissipes	1		
Anopheles brasiliensis	1		
Anopheles mediopunctatus	1		
Coquillettidia venezuelensis	8		
Coquillettidia albicosta	2		
Mansonia titillans	1		
Mansonia pseudotitillans	1		
Wyeomyia melanocephala	1		
Wyeomyia occulta	1		
Wyeomyia pseudopecten	1		
Birds (blood or organs)	14		
Culex portesi	1		Surinam (3)

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 log10/ml
Mice (nb)	SMB 3	ic	Death	2	9.0
Mice (nb)		ip	Death	2	9.0
Mice (nb)		sc			
Mice (wn)		ic	Death	3	7.5
Mice (wn)		ip			
Mice (ad)		ic	Death		
Mice (ad)		ip	Antibody		

Section IX - Experimental Arthropod Infection and Transmission

Arthropod species & virus source(a)	Method of Infection log10/ml (b)		Incubation period (c)		Transmision by bite (d)		Assay of arthropod, log10/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 — Residual — Death
Reported

Subclinical — Overt Disease

Clinical Manifestations
Benign febrile illness

Number of Cases — Category (i.e. febrile illness, etc.)

Section XII - Geographic Distribution

Known (Virus detected)
French Guiana, Surinam (3)

Suspected (Antibody only detected)

Section XIII - References

1. Digoutte, J.P. 1973. Rapport Annuel de l'Institut Pasteur de la Guyane Francaise, p. 17.
2. Digoutte, J.P. 1976. Ann. Microbiol. (Inst. Pasteur) 127 B:429-100%.
3. Panday, R.S. Personal communication.

Remarks