Virus Name: Melao		Abbreviation: MELV
Status **Probable Arbovirus**	Select Agent **No**	SALS Level **2**

SALS Basis
Results of SALS surveys and information from the Catalogue.

Other Information

Antigenic Group
Califronia

SECTION I - Full Virus Name and Prototype Number

Prototype Strain Number / Designation	Accession Number	Original Date Submitted
TRVL 9375		2/3/1985
Family **Bunyaviridae**	Genus **Bunyavirus**	
Information From **Trinidad Reg. Virus Laboratory**	Address **P.O. Box 164, Port of Spain, Trinidad**	

Information Footnote
Reviewed by editor

Section II - Original Source

Isolated By (name)	Isolated at Institute	
TRVL (1)	**Port of Spain, Trinidad**	
Host Genus **Aedes (Ochlerotatus) scapularis (371 mosquitoes)**	Species	Host Age/Stage **Adult**

Sex
Female

Isolated From	Isolation Details
Signs and Symptoms of Illness	Arthropod
Time Held Alive before Inoculation	
Collection Method **Human bait**	Collection Date **9/5/1955**

Place Collected (Minimum of City, State, Country)
St. Andrew County, Trinidad

Latitude	Longitude	
10° 38' N	**61° 3' W**	
Macrohabitat **Melajo Forest, Northeast Trinidad**	Microhabitat **Evergreen seasonal forest; mosquitoes taken at ground level**	Method of Storage until Inoculated **Held alive overnight at 4dC before sorting and grinding**

Footnotes

Section III - Method of Isolation

Inoculation Date
9/7/1955

Animal (Details will be in Section 6)
nb mice

Route Inoculated
Intracerebral

Reisolation
No

Other Reasons
No other strain present in laboratory prior to isolation of this virus.

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 **<1.5 dex**	Control Titer **4.4 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

Hemaggiutination **Yes**	Antigen Source **SMB ext. by sucrose-acetone+sonication (5)**	Erythrocytes (species used) **Goose**
pH Range **6.0-7.0**	pH Optimum **6.0**	
Temperature Range **22dC 4dC, 22dC, 37dC**	Temperature Optimum **22dC**	

Remarks

Serologic Methods Recommended
CF and NT

Footnotes

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

An antigen prepared from Melao virus failed to react in CF with the following mouse hyperimmune sera [1] :

Chikungunya	West Nile	Guaroa
Mayaro	Yellow fever	Rift Valley fever
Semliki forest	Zika	SF Naples
EEE	Apeu	Simbu
WEE	Marituba	Manzanilla
Sindbis	Oriboca	Oropouche
Rio Bravo	Catu	Turlock
Dengue	Guama	Tacaiuma
Ilheus	Bimiti	Wad Medani
JBE	Kairi	Quaranfil (EgAr 1095)
Ntaya	Cache Valley	Chenuda (EgAr 1152)
RSSE	Bunyamwera	Mengo
Spondweni	Wyeomyia	GD VII
St. Louis	Anopheles A	
Uganda S	Bwamba	

Melao antigen gave a positive reaction in CF with antiserum prepared from California encephalitis virus.

Studies at the Rockefeller Foundation Virus Laboratories, New York have demonstrated that Melao virus is related to but distinguishable from both California encephalitis virus and also from trivittatus virus shown to have immunological relationship to California encephalitis virus [2] , [3] .
SIRACA has antigenically classified Melao virus as a distinct virus type and placed it in the California encephalitis complex, one of two complexes comprising the California serogroup. Melao virus is composed of five subtypes [10] .

Section VI - Biologic Characteristics

Virus Source (all VERTEBRATE isolates)

Lab Methods of Virus Recovery (ALL ISOLATIONS)
Newborn mice, chick embryo cell cultures

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)	
Hamster kidney (PC)	SMB 33		No CPE						
BHK-21 (CL)					5	0.5-1.5 mm	6.3** (6)		
Vero (CL)					5	2.0-2.5 mm	6.1 (6)		
MA-104 (CL)					8	1-2 mm	6.4 (6)		
Chick embryo (PC)	BeAr 8033					Plaques (7)			
HeLa (CL)	TRVL 9375, MB 4		2+-3+	8.0** (8)					

** 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
Man	0/2,500	0/30 NT	Trinidad
Cebus (monkey)	0/26		
Alouatta (monkey)	0/79		
Birds	0/2,300		
Sentinel mice	0/4,303		
Aedes (Och) scapularis	1		Melajo Forest, Trinidad
Mixed pool mosquitoes	1		Forest area, Belem, Brazil (4)
Aedes scapularis	1		IAN Forest, Belem, Brazil (4)
Psorophora ferox	1		Forest area, Belem, Brazil (4)
Aedes serratus (pool of 72)	1		Itapetininga Field Sta., Brazil; 1966 (9)

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 31	ic 0.02	Illness, death	2-3	4.7
Mice (nb)		ip 0.03	Illness, death	4-10	>2.0
Mice (nb)		sc			
Mice (wn)		ic 0.03	Illness, death	5-7	4.3
Mice (wn)	SMB 35	ip 0.2	None		
chick emb. (10 day)	SMB 32	am.s.	None		
chick emb. (10 day)		al.c.	None		
chick emb. (7 day)		ys	Virus present after 10 passages		
chicks (1 day)	MB susp.	sc 0.5	None		
guinea pigs (ad)	MB susp.	ic 0.05	None		
Syrian hamsters (ad)	MB susp.	ic 0.05	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
Melao has been shown to multiply readily in Aedes aegypti following inoculation and may be maintained in serial passage (1).									

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
Subclinical	Overt Disease	
Clinical Manifestations		
Number of Cases	Category (i.e. febrile illness, etc.)	

Section XII - Geographic Distribution

Known (Virus detected)
Trinidad, Brazil

Suspected (Antibody only detected)

Section XIII - References

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Remarks