Virus Name: Umbre		Abbreviation: UMBV
Status **Probable Arbovirus**	Select Agent **No**	SALS Level **2**

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

Other Information

Antigenic Group
Turlock

SECTION I - Full Virus Name and Prototype Number

Prototype Strain Number / Designation	Accession Number	Original Date Submitted
IG1424		12/5/1984

Family	Genus
Bunyaviridae	**Bunyavirus**

Information From	Address
Dr. T.H. Work	**University of California Medical Center, Los Angeles, CA 90024**

Information Footnote
Reviewed by editor

Section II - Original Source

Isolated By (name)	Isolated at Institute	
Virus Research Centre (1)	**Poona, India**	
Host Genus **Culex bitaeniorhynchus**	Species	Host Age/Stage **Adult**

Sex
Female

Isolated From	Isolation Details

Signs and Symptoms of Illness	Arthropod

Time Held Alive before Inoculation
One day

Collection Method	Collection Date
Aspirated during biting on human	**10/14/1955**

Place Collected (Minimum of City, State, Country)
Near Umbre village, Bombay State, India

Latitude	Longitude
20° N	**75° E**

Macrohabitat	Microhabitat	Method of Storage until Inoculated
Island of bamboo-hardwood forest surrounded by open rice field in foothills of western ghats of peninsular India	**Humid shade of dense vegetation.**	**Held alive in tubes**

Footnotes

Section III - Method of Isolation

Inoculation Date
10/15/1955

Animal (Details will be in Section 6)
nb mice

Route Inoculated
ic and sc

Reisolation
No

Other Reasons

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 **3 dex inactivated**	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		
pH Range	pH Optimum	
6.2		
Temperature Range	Temperature Optimum	
37dC		

Remarks
HA with strain G16310 in 29th newborn mouse passage gives 4 units at 1:5 dilution.

Serologic Methods Recommended
CF, NT

Footnotes
HA with strain G16310 in 29th newborn mouse passage gives 4 units at 1:5 dilution.

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

Complement-fixation with homologous strains and crosses with Turlock.

Immunologically unrelated to chikungunya, JBE, dengue 1, RSSE, yellow fever, Marituba, Oriboca, Caraparu, Apeu, Bunyamwera, Wyeomyia, Guama, Catu, Quaranfil, Chenuda, Bwamba, Anopheles A, Simbu, Oropouche, Sathuperi, Wad Medani, CTF, Bhanja, Ganjam, Tacaiuma, Lunyo, Naples sandfly, Sicilian sandfly, and Manzanilla by complement-fixation tests. Umbre virus also was shown to be distinct from other Turlock serogroup viruses by cross-neutralization test [8] .

Umbre virus still cross-reacts with plaque-purified Barmah Forest virus by CF and HI tests [9] . Umbre virus remains in the Turlock serogroup while Barmah Forest virus was placed in serogroup A.

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	
		Day (c)	Extent (d)	Titer TCD50/ml (e)	Day (c)	Size (f)	Titer PFU/ml (e)	+/- (g)	
Vero (CL)	SM 4				9	3 mm	5.2* (4)		
LLC-MK2 (CL)					3	4 mm	5.8 (4)		
PS (CL)			CPE			Plaques (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
Man	None	None/44	India
Man		42/915 * NT	Malaysia (6)
Bird (blood)	1		South India (2)
Mosquito			
Culex vishnui	3		Sathuperi, India (3)
Culex vishnui	1		Sulari, India (3)
Culex vishnui	1		Kammavanpettai, India (3)
Cx pseudosinensis	1		Malaysia (6)
Cx vishnui	2		
Cx pseudovishnui	1		
Sentinel chickens		37/66 HI,NT	
Wild birds		12/375 HI,NT	

N.P. Gupta (Poona) has noted ten or more isolations from naturally infected arthropods (5).

* Included nine conversions

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)	IG16310	ic 0.02	Paralysis and death	6	5.1
Mice (nb)		ip			
Mice (nb)		sc			
Mice (wn)	IG1424	ic 0.03	Sickness and death	4-7	4.6
Mice (wn)		ip			

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

Section XII - Geographic Distribution

Known (Virus detected)
India, Malaysia

Suspected (Antibody only detected)

Section XIII - References

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Remarks