Virus Name: Thimiri	Abbreviation: THIV

Status
Possible Arbovirus

Select Agent
No

SALS Level
2

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

Other Information

Antigenic Group
Simbu

SECTION I - Full Virus Name and Prototype Number

Prototype Strain Number / Designation
VRC 66414

Accession Number

Original Date Submitted
11/12/1984

Family
Bunyaviridae

Genus
Bunyavirus

Information From
Arbovirus Res. Off., Microbiol Dept.

Address
Christian Med. Coll. (CMC) Hosp., Vellore-4, N. Arcot, Tamil Nadu, India

Information Footnote
Reviewed by editor

Section II - Original Source

Isolated By (name)
D.E. Carey

Isolated at Institute
Virus Research Centre, Poona, -CMC

Host Genus
Ardeola grayii Sykes (Paddy birds)

Species

Host Age/Stage
Nestling

Sex
Not Answered

Isolated From	Isolation Details
Serum/Plasma	

Signs and Symptoms of Illness

Arthropod

Time Held Alive before Inoculation

Collection Method
Removed from nest, bled, returned to nest

Collection Date
8/23/1963

Place Collected (Minimum of City, State, Country)
Thimiri, Walljah Tk., N. Arcot Dist., India

Latitude
12° 55' N

Longitude
79° 8' E

Macrohabitat
Throughout India, Pakistan, Burma, Ceylon (3)

Microhabitat
Found wherever there is water - ditches, ponds, open wells, rivers, swamps (Ibid.)

Method of Storage until Inoculated
-50dC

Footnotes

Section III - Method of Isolation

Inoculation Date
8/26/1963

Animal (Details will be in Section 6)
nb mice

Route Inoculated
Intracerebral

Reisolation
Yes

Other Reasons
Additional strains were isolated from paddy birds in four other localities

Homologous Antibody Formation by Source Animal
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)	

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) **1.0%**	After Treatment Titer **<2.3 dex**	Control Titer **5.7 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	Antigen Source	Erythrocytes (species used)
No	**SMB ext. by sucrose-acetone**	**Goose****
pH Range **6.0-7.0**	pH Optimum	
Temperature Range **22dC, 37dC**	Temperature Optimum	

Remarks
SMB tr. by alk. aqueous extraction, with and without protamine treatment, also tested for HA ** Others used for HA detection included human O, chicken, guinea pig, mouse, rat, sheep

Serologic Methods Recommended
CF, NT

Footnotes
SMB tr. by alk. aqueous extraction, with and without protamine treatment, also tested for HA ** Others used for HA detection included human O, chicken, guinea pig, mouse, rat, sheep

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

In complement-fixation tests performed in Vellore, non-reactive with hyperimmune mouse sera to: group A virus, Sindbis; group B viruses, dengue, Japanese, encephalitis, West Nile; other arboviruses including Chittoor (Bunyamwera), Sathuperi (Simbu) and Umbre (Turlock); other agents isolated previously in Vellore and believed to be arboviruses though not at the time identified or grouped; and to the LGV- ornithosis viruses. Reactive with hyperimmune mouse sera to other strains of same agent.
At the Yale Arbovirus Research Unit (YARU), the Thimiri virus (I66414) was found to be closely related or identical by CF and NT to viruses isolated in Egypt from a Sylvia communis in 1963 (EgAn 6165) and from a Sylvia curraca in 1966 (EgAn 890-3). The EgAn 890-3 strain reacted by CF with Simbu grouping ascitic fluid and not with 16 other grouping fluids. A Serum of EgAn 890-3 with homologous titer of 1024 reacted to 16 with Buttonwillow, to 32 with Oropouche and to 8 with Simbu antigens and was negative with 6 others, indicating that the relationship by CF to the Simbu group viruses was definite [4] .
Results of cross-neutralization comparisons of Simbu group viruses place Thimiri virus in the Thimiri complex within the Simbu serogroup [6] .

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)	
PS (CL)			CPE			Plaques (5)			

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
Ardeola grayii (bird)	8/383		Vellore Tamil Nadu, India
Sylvia communis (bird)	1		Egypt; 1963 (4)
Sylvia curraca (bird)	1		Egypt; 1966 (4)

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)	SM 9-10	ic	100% mortality		
Mice (nb)		ip	100% mortality		
Mice (nb)		sc			
Mice (wn)		ic	100% mortality		
Mice (wn)		ip	No illness		
Mice (nb)	SM 11	ic			6.6

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; Egypt

Suspected (Antibody only detected)

Section XIII - References

1. Carey, D.E., et al. 1971. Indian J. Med. Res. 59:1708-1711.
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3. Salim Ali, The Book of Indian Birds. 7th Ed. Bombay Natural History Society. Bombay, India. c. 1964.
4. Shope, R.E. Personal communication.
5. Cogate, S.S. 1976. Indian J. Med. Res. 64:83-86.
6. Kinney, R.M. and Calisher, C.H. 1981. Am. J. Trop. Med. Hyg. 30:1307-1318.

Remarks