

Virus Name: Matruh		Abbreviation: MTRV
Status Possible Arbovirus	Select Agent No	SALS Level 2
SALS Basis Results of SALS surveys and information from the Catalogue.		
Other Information		
Antigenic Group Tete		

SECTION I - Full Virus Name and Prototype Number

Prototype Strain Number / Designation An 1047-61 (1)	Accession Number	Original Date Submitted 11/7/1984
Family Bunyaviridae	Genus Bunyavirus	
Information From J.R. Schmidt	Address Department of the Navy, BUMED, Washington, D.C. 20372, USA	
Information Footnote Reviewed by editor		

Section II - Original Source

Isolated By (name) J.R. Schmidt	Isolated at Institute NAMRU-3, Cairo, Egypt	
Host Genus Sylvia curruca (Lesser whitethroat), migrating	Species	Host Age/Stage Adult
Sex Not Answered		
<u>Isolated From</u>	<u>Isolation Details</u>	
Whole Blood	(heparin)	
Signs and Symptoms of Illness None	Arthropod	
Time Held Alive before Inoculation		
Collection Method Netted	Collection Date 9/26/1961	
Place Collected (Minimum of City, State, Country) Burg el Arab, Matruh Governorate, Egypt		
Latitude 31° N	Longitude 29° E	
Macrohabitat Irrigated garden oasis in semi-desert	Microhabitat	Method of Storage until Inoculated Not stored
Footnotes		

Section III - Method of Isolation

Inoculation Date 9/27/1961	
Animal (Details will be in Section 6) nb mice	
Route Inoculated Intracerebral	Reisolation Yes
Other Reasons	
Homologous Antibody Formation by <u>Source Animal</u> 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)	
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<u>Stability of Infectivity (effects)</u>		
pH (infective range)		
Lipid Solvent (ether - % used to test) 1:10	After Treatment Titer 3.0 dex	Control Titer 6.3 dex
Lipid Solvent (chloroform)	After Treatment Titer	Control Titer
Lipid Solvent (deoxycholate)	After Treatment Titer 5.0 dex	Control Titer 5.6 dex
Other (formalin, radiation) Chlortetracycline resistant		
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<u>Virion Morphology</u>		
Shape	Dimensions 100-140 nm	
Mean nm	Range nm	
Measurement Method Sucrose gradient centrifugation	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

Antigen Source

Erythrocytes (species used)

Yes

SMB ext. by sucrose-acetone

Goose

pH Range

pH Optimum

5.8-6.2

5.8-6.2

Temperature Range

Temperature Optimum

4dC - 37dC

Remarks

Sonication after extraction improves titer; maximum titer obtained =1:32

Serologic Methods Recommended

CF, HI, NT

Footnotes

Sonication after extraction improves titer; maximum titer obtained =1:32

Related to Tete and Bahig viruses by CF and HI as follows [1] :

Antigens	CF:		
	Matruh	Sera or Ascitic Fluids Bahig	Tete
Matruh	64/>64 *	>128/>64	4/>64
Bahig	64/512	>128/>512	4/512
Tete	4/8	32/512	32/>512

* Serum titer/antigen titer

Antigens	HI:		
	Tete	Sera or Ascitic Fluids Bahig	Matruh
Tete	80	20	10
Bahig	20	1280	80
Matruh	20	80	640

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							Growth Without CPE +/- (g)
		CPE			PLAQUES				
		Day (c)	Extent (d)	Titer TCD50/ml (e)	Day (c)	Size (f)	Titer PFU/ml (e)		
Vero (CL)	P3SM1				3	7.0 mm	9.3** (5)		
LLC-MK2 (CL)					4-6	2.0 mm	9.2 (5)		

** Expressed in dex

Vertebrate (species and organ) and arthropod	No. isolations/No. tested	No. with antibody/No. tested Test used	Country and region
Phyll. trochilus	23/662 *	1/28 ** HI	Egypt, Cyprus
Sylvia curruca	10/323 *	4/25 ** HI	
Saxicola rubetra	7/264 *		
Phoen. phoenicurus	4/441 *	0/27 ** HI	
Sylvia communis	4/181 *	1/24 ** HI	
Luscinia luscinia	3/161 *	0/27 ** HI	
Sylvia borin	2/35	4/4 ** HI	
Carduelis cannabina	1/110 *		Egypt
Coturnix coturnix	1/557 *	0/1 ** HI	Egypt, Cyprus
Lanius collurio	1/287 *	0/28 ** HI	
Serinus canaria	1/23		Egypt
Migratory birds (finch)	2		Italy, 1968-69 (3)
Man		0/30 ** NT	Cairo, Egypt
Hyalomma marginatum (5 nymphs; unengorged)	1/2 pools		Cairo, Egypt (4)

* These isolates are indistinguishable from one another by CF but may represent other members of the Tete group.

** Antibody against Matruh and/or Bahig viruses.

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 ₁₀ /ml
Mice (nb)	SMB 6	ic 0.01	Death	3(a)	6.5
Mice (nb)		ip 0.05	Death	10(b)	3.2
Mice (nb)		sc			
Mice (wn)		ic 0.03	Death	6.3	6.0
Mice (wn)		ip 0.2	None		<0.5

(a) at 10⁻³ dilution

(b) at 10⁻² dilution

Section IX - Experimental Arthropod Infection and Transmission

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

Section X - Histopathology

Character of lesions (specify host)	
<u>Inclusion Bodies</u>	<u>Intranuclear</u>
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) Egypt, Italy
Suspected (Antibody only detected) Europe

Section XIII - References

1. Williams, M.C., et al. 1966. E. Afr. Virus Res. Inst. Rep. No. 16:24. 2. Shope, R.E. Unpublished data. 3. Balducci, M., et al. 1973. Ann. Microbiol. 124B:231-237. 4. Mousa, M.I., et al. 1974. J. Egypt. Pub. Hlth. Assn. 49:341-348. 5. Lazuick, J. Personal communication. 1978.
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Remarks
