

Virus Name: Wad Medani		Abbreviation: WMV
Status Probable Arbovirus	Select Agent No	SALS Level 2
SALS Basis Results of SALS surveys and information from the Catalogue.		
Other Information		
Antigenic Group Kemerovo		

SECTION I - Full Virus Name and Prototype Number

Prototype Strain Number / Designation AR-492 (10)	Accession Number	Original Date Submitted 2/14/1985
Family Reoviridae	Genus Orbivirus	
Information From R.M. Taylor	Address School of Public Health, University of California, Berkeley, California	
Information Footnote Reviewed by editor		

Section II - Original Source

Isolated By (name) R.M. Taylor, et al. (1)	Isolated at Institute NAMRU-3 Cairo, Egypt	
Host Genus Rhipicephalus sanguineus	Species	Host Age/Stage Adult
Sex Not Answered		
<u>Isolated From</u>	<u>Isolation Details</u>	
Signs and Symptoms of Illness	Arthropod	
Time Held Alive before Inoculation		
Collection Method By hand, from sheep, by Harry Hoogstraal	Collection Date 11/26/1952	
Place Collected (Minimum of City, State, Country) Wad Medani, Sudan		
Latitude 16° N	Longitude 36° E	
Macrohabitat Semi-arid open grassland	Microhabitat Body of sheep	Method of Storage until Inoculated Held alive at ambient temperature
Footnotes		

Section III - Method of Isolation

Inoculation Date
12/16/1952

Animal (Details will be in Section 6)
nb mice

Route Inoculated ic and sc	Reisolation Yes
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Other Reasons
New virus, none other in laboratory, was serially passed in ticks.

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)
Labile at pH 3.0; relatively stable to lipid solvents (9)

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	Control Titer
Other (formalin, radiation)		

Virion Morphology

Shape Icosahedral symmetry (8)	Dimensions 65-80 nm	
Mean nm	Range nm	
Measurement Method Electron microscopy (8)	Surface Projections/Envelope Envelope not present	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)
pH Range	pH Optimum	
Temperature Range	Temperature Optimum	

Remarks

*** Reisolation not identified**

Serologic Methods Recommended

CF, NT

Footnotes

*** Reisolation not identified****Section V - Antigenic Relationship and Lack of Relationship to Other Viruses**

Not related by NT to West Nile, Sindbis, SF Sicilian and Naples, Quarantil, and Chenua viruses that had been isolated in Egypt and were available for testing.

In 1955 the Wad Medani (AR-492) was sent to J. Casals at RFVL, who regards it as a distinct virus and has been instrumental in identifying very closely related or identical strains in other parts of the world as shown under Host Range [2].

Previously designated strains of Wad Medani, isolated from ticks in Malaysia and Singapore, have now been considered distinct enough to be registered as Seletar virus [4].

Section VI - Biologic Characteristics

Virus Source (all VERTEBRATE isolates)
Blood (LV)

Lab Methods of Virus Recovery (ALL ISOLATIONS)
Newborn mice and embryonated eggs; chick embryo and hamster kidney cell cultures

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)		
BHK-21 (CL)		3-4	4+	7.5* (6)					
Rabbit kidney (PC)			Slight or none (7)						

* Expressed in dex

Vertebrate (species and organ) and arthropod	No. isolations/No. tested	No. with antibody/No. tested Test used	Country and region
Man	0/3,286		Egypt and Sudan
Other vertebrates	0/293		
Rhipicephalus sanguineus	1/15		Sudan (1)
Hyalomma sp.	1		Near Poona, India (1)
Hyalomma asiaticum (ticks collected from sheep and camels)	5		USSR (12)
Amblyomma cajennense	1		Jamaica (2)
Amblyomma cajennense	2		Pakistan (3)
H. anatolicum	1		Iran (14)
Boophilus microplus and Hyalomma a. anatolicum	1		Pakistan (3)
Rhipicephalus guilhoni	8		N. Senegal, 1977(13)
R. evertsi	1		
Man		0/191 CF	Lower Egypt (11)
Camels		1/137 CF	
Buffalo		3/108 CF	
Sheep		0/100 CF	
Pigs		1/101 CF	
Dogs		0/101 CF	
Donkeys		0/187 CF	
Rodents		1/94 CF	

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)	MB 4	ic	Death	4-6	5
Mice (nb)		ip			
Mice (nb)		sc			
Mic	MB 5	ic	Irregular deaths		
Mice (wn)		ip			
emb. eggs (8 day)		ys			

Newborn hamsters and rats susceptible; older animals refractory. Virus is highly neurotropic (5). Guinea pigs, rabbits and goats not susceptible.

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
R. sanguineus, MB 6		0.001 ml					>5.8 on day 7		
May be propagated in serial passages in R. sanguineus and Ornithodoros savagnyi ticks.									

Section X - Histopathology

Character of lesions (specify host)

sm, ic: in CNS - neuronal degeneration, round cell infiltration and cuffing. Skeletal muscles - minimal focal necrosis and round cell infiltration. Basophilic, intranuclear masses in neurons (5).

Inclusion Bodies

Intranuclear

Lower Vertabrates

Organs/Tissues Affected

Category of tropism

Neurotropic (5)

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)

Sudan, India, Jamaica, Pakistan, USSR (12), Senegal(13), Iran (14)

Suspected (Antibody only detected)

Egypt

Section XIII - References

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Remarks