

Virus Name: Pretoria		Abbreviation: PREV
Status Possible Arbovirus	Select Agent No	SALS Level 2
SALS Basis Results of SALS surveys and information from the Catalogue.		
Other Information		
Antigenic Group Dera Ghazi Khan		

SECTION I - Full Virus Name and Prototype Number

Prototype Strain Number / Designation EgArt 3089	Accession Number	Original Date Submitted 6/11/1984
Family Bunyaviridae	Genus Nairovirus	
Information From James D. Converse and M.I. Moussa	Address U.S. MANRU-3, c/o American Embassy, Cairo, Egypt	
Information Footnote Reviewed by editor		

Section II - Original Source

Isolated By (name) U.S. NAMRU-3	Isolated at Institute Cairo, Egypt	
Host Genus Argas (A.) africanus	Species	Host Age/Stage Adult
Sex Female		
<u>Isolated From</u>	<u>Isolation Details</u>	
Signs and Symptoms of Illness	Arthropod Depleted	
Time Held Alive before Inoculation		
Collection Method By hand from nests found in house	Collection Date 4/1/1973	
Place Collected (Minimum of City, State, Country) Derdepoort, Republic of South Africa		
Latitude 25° 40' S	Longitude 28° 20' E	
Macrohabitat Domestic house, ca. 1,352 meters altitude	Microhabitat Nest of Cape-rock pigeon, Columba guinea phaenota Gray	Method of Storage until Inoculated Ticks alive to NAMRU-3, stored at -70dC
Footnotes		

Section III - Method of Isolation

Inoculation Date
8/27/1973

Animal (Details will be in Section 6)
nb mice

Route Inoculated
Intracerebral

Reisolation
Yes

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) 1:100	After Treatment Titer 0.0 dex	Control Titer 7.5 dex
Other (formalin, radiation)		

Virion Morphology

Shape	Dimensions <220 nm	
Mean nm	Range nm	
Measurement Method Passed 450 nm and 220 nm membrane filters	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
No

Antigen Source
SMB ext. by sucrose-acetone

Erythrocytes (species used)
Goose

pH Range
5.8-7.2

pH Optimum

Temperature Range

Temperature Optimum

Remarks

Serologic Methods Recommended
CF, NT

Footnotes

Not related to: ACD, AMT, BAH, BDA, BHA, BUN, BEA, CNU, CG, CTF, CON, DEN-1, DGK, DHO, DUG, FAR, GAN, GA, HAZ, HUA, HUG, JA, JOS, KSO, KS, KEM, KTR, LB, LGT, LNJ, LIP, LS, MTY, MWA, MTR, MAT, MOL, NYM, OBD, PTH, POW, PS, QYB, QRF, RF, SAK, SFS, SAW, SIL, SIM, SIN, SOL, THO, TRB, UGS, UPO, UUK WM, WAN, WN,YF, ZIKA, ZIR, EgArt 1147 (TET -like), EgArt 1475, EgArt 2771, EgArt 3080, EgArt 3088, EgAR 1169-64, EgAR 1225-64, EgANB 12502, EgANB 13383, EgAN 1398-61.

Immune Sera or Antigens	Pretoria Antigen		Pretoria Immune Serum	
	Ht/Ho	CF Ratio	Ht/Ho	CF Ratio
Dera Ghazi Khan ^a	0/8		8/256	1/32
Abu Hammad ^b	64/512	1/8	32/256	1/8
Abu Mina ^c	64/512	1/8	32/256	1/8
Kao Shuan ^d	0/128		0/256	
Pathum Thani (e)	0/128		0/256	
Q 3255 ^f	32/256	1/8	16/256	1/16
EgArt 427 ^g	0/256		16/256	1/16

^a = JD-254, Isolated by F. Begum and C.L. Wisseman in July 1967 from F1 larval *Hyalomma dromedarii* from camels at Sakhi Sarwar, Dera Ghazi Khan, Pakistan.

^b = EgArt 1194, Isolated by R.E. Williams in June 1971 from the tick *Argas hermanni* collected from a pigeon house in Abu Hammad, Sharqiya, Egypt.

^c = EgArt 4996-63, Isolated by J.R. Schmidt in May 1963 from the blood of a northward migrating turtle dove (*Streptopelia turtur*) trapped at Bahig, Egypt.

^d = EgArt 904, Isolated by R.E. Williams in June 1971 from the tick *Argas robertsi* under bark of Acacia tree where night heron (*Nycticorax nycticorax*) were nesting at Kao Shuan, Taiwan.

^e = EgArt 753, Isolated by R.E. Williams in May 1970 from the tick *Argas robertsi* collected from an open-billed stork colony (*Anastomus ascitans*) in Pathum Thani, Thailand.

^f = Q 3255, Isolated by L. Mercer in 1968 from sera of *Streptopelia turtur* collected during palearctic migratory bird studies in Cyprus.

^g = EgArt 427, Isolated by R.E. Williams in May 1969 from the tick *Argas streptopelia* collected from the date trees in which herons (*Bubulcus ibis ibis*) were nesting near Mut, Dakhla Oasis, Egypt.

Pretoria virus has been shown by HI to be an antigenic member of the Nairovirus supergroup [3].

Section VI - Biologic Characteristics

Virus Source (all VERTEBRATE isolates)

Lab Methods of Virus Recovery (ALL ISOLATIONS)
Newborn mice and hamsters

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)		

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
Argas (A.) africanus	1/1 pool		Derdepoort, Republic of South Africa

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)	P-4	ic 0.01	Paralysis, death	4	10.0
Mice (nb)		ip 0.01	Paralysis, death	6	5.2
Mice (nb)		sc			
Mice (wn)		ic 0.02	Antibody		
Mice (wn)		ip 0.02	Antibody		
hamster (nb)		ic 0.02	Paralysis, death	5	
hamster (21 day)		ic 0.03	Antibody		
guinea pig (10 day)		ic 0.03	Antibody		
rabbit (3-4 wk)		ic 0.05	Antibody		

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) Republic of South Africa
Suspected (Antibody only detected)

Section XIII - References

1. Converse, J.D., et al. 1975. J. Med. Ent. 12:202-205. 2. Hoogstraal, H., et al. 1975. J. Med. Ent. 12:194-201. 3. Casals, J. and Tignor, G.H. 1980. Intervirology 14:144-147.

Remarks
