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.) africolumbae

Species

Host Age/Stage
Adult

Sex
Female

Isolated From

Isolation Details

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

Hemaggiutination	Antigen Source	Erythrocytes (species used)
No	**SMB ext. by sucrose-acetone**	**Goose**
pH Range **5.8-7.2**	pH Optimum	
Temperature Range	Temperature Optimum	

Remarks

Serologic Methods Recommended
CF, NT

Footnotes

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

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, LJN, 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 CF		Pretoria Immune Serum CF	
	Ht/Ho	Ratio	Ht/Ho	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							
		CPE			PLAQUES			Growth Without CPE	
		Day (c)	Extent (d)	Titer TCD50/ml (e)	Day (c)	Size (f)	Titer PFU/ml (e)	+/- (g)	

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.) africolumbae	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 log10/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 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)
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