Virus Name: Soldado	Abbreviation: SOLV

Status
Arbovirus

Select Agent
No

SALS Level
2

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

Other Information

Antigenic Group
Hughes

SECTION I - Full Virus Name and Prototype Number

Prototype Strain Number / Designation
TRVL 52214

Accession Number

Original Date Submitted
12/18/1984

Family
Bunyaviridae

Genus
Nairovirus

Information From
Trinidad Regional Virus Laboratory

Address
P.O. Box 164, Port-of-Spain, Trinidad

Information Footnote
Reviewed by editor

Section II - Original Source

Isolated By (name)
TRVL (1)

Isolated at Institute
Port-of-Spain, Trinidad

Host Genus
Ornithodoros capensis and/or O. denmarki (Older than 1st nymphs)

Species

Host Age/Stage
5 nymphs

Sex
Not Answered

Isolated From

Isolation Details

Signs and Symptoms of Illness

Arthropod

Time Held Alive before Inoculation

Collection Method
Collected from Brown Noddy Tern Anous stolidus

Collection Date
6/16/1963

Place Collected (Minimum of City, State, Country)
Soldado Rock, Trinidad

Latitude
10° 42' N

Longitude
62° 56' W

Macrohabitat
Rocky off-shore tropical island; sancutary for sea birds

Microhabitat
Naked rock with some low shrubs, grasses and herbs

Method of Storage until Inoculated
Mechanical deep freeze at -56dC

Footnotes

Section III - Method of Isolation

Inoculation Date
7/24/1963

Animal (Details will be in Section 6)
nb mice

Route Inoculated
Intracerebral

Reisolation
No

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) **1:2**	After Treatment Titer **<1.6 dex**	Control Titer **2.8 dex**
Lipid Solvent (chloroform)	After Treatment Titer	Control Titer
Lipid Solvent (deoxycholate)	After Treatment Titer	Control Titer

Other (formalin, radiation)

Virion Morphology

Shape **Bunyavirus-like (5)**	Dimensions	
Mean nm	Range nm	
Measurement Method **Electron microscopy (5)**	Surface Projections/Envelope **Trilamellar, envelope present; 8-9 nm in diameter (5)**	Nucleocapsid Dimensions, Symmetry

Morphogenesis

Site of Constituent Formation in Cell	Site of Virion Assembly	Site of Virion Accumulation
Inclusion Bodies	Other	

Hemagglutination

Hemaggiutination **Not tried**	Antigen Source	Erythrocytes (species used)
pH Range	pH Optimum	
Temperature Range	Temperature Optimum	

Remarks

Serologic Methods Recommended
CF

Footnotes

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

TRVL 52214 CF antigen with titer of 64 did not react in dilutions 1/4, 1/16, and 1/64 with potent immune fluids prepared with: Group A, group B, California group polyvalent, Colorado tick fever, Hughes, Wad Medani (2 strains), Quaranfil, Chenuda, Nyamaninni, Nyando, mouse encephalomyelitis (GD1), Guaroa, mouse hepatoencephalitis (Tr 23421), Ganjam, IG 673, Bhanja, Ilesha, Uukuniemi, Kairi, Kemerovo, Manzanilla, Oropouche, Silverwater, Simbu, Thogoto, Tacaiuma, Tacaribe, Calovo, Turlock, Congo, Wyeomyia, Kowanyama, LCM, Newcastle disease virus, California encephalitis.
Hughes virus antigen with titer of 32 did not react with TRVL 52214 serum with titer of 256.

These CF tests were done by Dr. J. Casals, Yale Arbovirus Research Unit.

NOTE: Later studies at YARU (1970) have shown the Soldado virus to be antigenically related to the Hughes virus; by CF but not by NT in Vero cell cultures.

Section VI - Biologic Characteristics

Virus Source (all VERTEBRATE isolates)
Blood (LV), CNS (LV), heart (LV), lung (LV), gizzard and pooled organs of birds (9,10)

Lab Methods of Virus Recovery (ALL ISOLATIONS)
Newborn mice; BS-C-1 and chick embryo cell cultures

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)	
Vero (CL)			CPE						
BHK-21 (CL)			No CPE					-	

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
Ornithodoros capensis and/or O. denmarki	1/117 pools (3,639 ticks)		Soldado Rock, Trinidad, 1961-65
Ornithodoros (A.) capensis	1		Lake Shalla, Ethiopia (3)
Ornithodoros (A.) capensis	7		Seychelles, Indian Ocean (4)
O. (A.)maritimus	1		Northern Wales, Great Britain (4)
O. (A.)maritimus	8/92		Cape Frehel, Cotes- du-Nord, France(5)
O. cpaensis	14		Northern Senegal, 1977 (6)
O. (A.) maritimus	1		Essaovira, Morocco (7)

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)	SMB 4	ic 0.02	Death	9-11	4.7
Mice (nb)	SMB 3	ip 0.03	None		
Mice (nb)		sc			
Mice (wn)		ic 0.03	Death	9-11	
Mice (wn)		ip 0.03	None		

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
Ornithodoros capensis, 1 female, 2 nymphs; each transmitted virus by bite to a baby chick which became viremic (3).									

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)
Ethiopia (3); Seychelles, Indian Ocean (4); Wales (4); France (5); Senegal (6); Morocco (7), Trinidad

Suspected (Antibody only detected)

Section XIII - References

1. Taylor, R.M. Comp. 1967. Catalogue of Arthropod-borne Viruses, 1st Ed., p. 793. U.S. Government Printing Office.
2. Jonkers, A.H., et al. 1973. J. Med. Ent. 10:517-519.
3. Hoogstraal, H. 1973. In A.J. Gibbs, ed., Viruses and Vertebrates, No. Holland Publ. Co., Amsterdam, pp. 349-390.
4. Converse, J.D., et al. 1975. Am. J. Trop. Med. Hyg. 24:1010-1018.
5. Chastel, C., et al. 1979. Arch. Virol. 60:153-159.
6. Main, A.J., et al. 1980. J. Med. Ent. 17:380-382.
7. Chastel, C., et al. 1981. Bull. Soc. Path. Exot., Paris 74:499-505.

Remarks