Virus Name: Sixgun City		Abbreviation: SCV
Status **Possible 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	Accession Number	Original Date Submitted
RML52451		11/27/1984

Family	Genus
Reoviridae	**Orbivirus**

Information From	Address
C.E. Yunker	**Rocky Mountain Laboratory, NIAID, NIH, Hamilton, Mont. 59840**

Information Footnote
Reviewed by editor

Section II - Original Source

Isolated By (name)	Isolated at Institute	
C.E. Yunker, et al (1)	**Rocky Mountain Laboratory**	
Host Genus **Argas cooleyi**	Species	Host Age/Stage **25 adults**

Sex
Not Answered

Isolated From	Isolation Details
Signs and Symptoms of Illness	Arthropod
Time Held Alive before Inoculation	
Collection Method **By hand, by J.E. George**	Collection Date **6/28/1969**

Place Collected (Minimum of City, State, Country)
Texas, Randall Co., Sunday Canyon, USA

Latitude	Longitude	
Macrohabitat **"Sixgun City", 12 miles E. of Canyon**	Microhabitat **Under flakes of rock on cliff-face below active cliff-swallow colony**	Method of Storage until Inoculated **Held alive in humidified vials at ambient temperatures**

Footnotes

Section III - Method of Isolation

Inoculation Date
7/4/1969

Animal (Details will be in Section 6)
(Tissue Culture)

Route Inoculated

Reisolation
Yes

Other Reasons
12 additional strains of this virus isolated from other pools of 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)

Lipid Solvent (ether - % used to test) **1:2**	After Treatment Titer **4.3 dex**	Control Titer **4.8 dex**
Lipid Solvent (chloroform)	After Treatment Titer	Control Titer
Lipid Solvent (deoxycholate)	After Treatment Titer	Control Titer

Other (formalin, radiation)

Virion Morphology

Shape	Dimensions **50-220 nm**	
Mean nm	Range nm	
Measurement Method **Filtration (2)**	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; infected tissue culture material ext. by sucrose-acetone**	**Chick**

pH Range	pH Optimum
6.0-7.0	

Temperature Range	Temperature Optimum
4dC, 22dC and 37dC	

Remarks

Serologic Methods Recommended
CF and NT

Footnotes

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

Immune Sera	Sixgun City Antigen/Virus		
	CF		SMNT
	Ht/Ho	Ratio	Ht/Ho
Mono Lake (Ar 861)	32/64	1/2	3.5/6.0(a)
Huacho (Ar 883)	16/32	1/2	1.9/4.5
Chenuda (Ar 1170)	0/128	0/128	-

Antigens/Viruses	Sixgun City Immune Serum		
	CF		SMNT
	Ht/Ho	Ratio	Ht/Ho
Mono Lake (Ar 861)	64/64	1	6.0/3.7 [a]
Huacho (Ar 883)	16/32	1/2	2.9/3.7
Chenuda (Ar 1170)	0/128	0/128	-

[a] LNI in dex

In a tissue-culture neutralization test, Sixgun City virus plaques were unaffected by immune sera from 13 viruses: Chenuda (Ar 1170), Nyamanini (Ar 1304), Sapphire I, Sapphire II, Johnston Atoll, Powassan (791A), Quaranfil (Ar 1113), Raza, Matucare, Midway (RML 47153), Wad Medani (Ar 492) and Punta Salinas (Ar 888). However, Sixgun City virus plaques were significantly neutralized (>3.0 dex) upon exposure to Mono Lake (Ar 861) and Huacho (Ar 883) immune sera [1] . In CF tests we were unable to show a relationship between Sixgun City and Chenuda viruses, although this was readily demonstrated for Mono Lake and Chenuda viruses [1] . Further work may reveal Mono Lake, Huacho and Sixgun City viruses to be geographic or populational variants of a single virus.

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							
		CPE			PLAQUES			Growth Without CPE	
		Day (c)	Extent (d)	Titer TCD50/ml (e)	Day (c)	Size (f)	Titer PFU/ml (e)	+/- (g)	
Vero (CL)	V5SM3	2-5	CPE		5-7		>7.0* PFU		
BHK-21 (clone 13)(CL)	V5SM3		CPE			Plaques			
BHK 0853 (CL)	V5SM3		CPE			Plaques			

* Expressed in dex

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 cooleyi	13/45 pools (818 ticks)		Texas and Colorado, USA

A single pool of 14 nymphal and adult Ornithodoros concanensis ticks, from same habitat as virus-infected A. cooleyi, failed to yield virus.

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)	V5SM3*	ic 0.02	Death	8.8	7.4
Mice (nb)		sc,ip 0.05	Nil		
Mice (nb)		sc			
Mice (wn)		ic 0.03	Nil		
Mice (wn)		sc,ip 0.03	Nil		
chickens (nh)		ic 0.03	Nil		
chickens (nh)		sc,ip 0.01	Nil		

* Strain RML52451 isolated and passed twice in Vero cells, then passed alternately in newborn mice (3 times) and Vero cells (2 times)

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)
Texas; Colorado, USA

Suspected (Antibody only detected)

Section XIII - References

1. Yunker, C.E., et al. 1972. Acta Virol. 16:415-421.
2. Clifford, C.M., et al. 1971. Am. J. Trop. Med. and Hyg. 20:461-468.

Remarks