

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

SECTION I - Full Virus Name and Prototype Number

Prototype Strain Number / Designation IG 14132	Accession Number	Original Date Submitted 3/16/1985
Family Bunyaviridae	Genus Bunyavirus-like	
Information From The Virus Research Centre	Address Poona, India	
Information Footnote Reviewed by editor		

Section II - Original Source

Isolated By (name) The Virus Research Centre	Isolated at Institute Poona, Maharashtra, India	
Host Genus Haemaphysalis spinigera	Species	Host Age/Stage Adult
Sex Male		
<u>Isolated From</u>	<u>Isolation Details</u>	
Signs and Symptoms of Illness	Arthropod	
Time Held Alive before Inoculation		
Collection Method From undergrowth in forest	Collection Date 8/7/1957	
Place Collected (Minimum of City, State, Country) Kannur, Shimoga, Mysore, India		
Latitude 14° 17' N	Longitude 75° 9' E	
Macrohabitat	Microhabitat	Method of Storage until Inoculated Kept alive until processed
Footnotes		

Section III - Method of Isolation

Inoculation Date
8/14/1957

Animal (Details will be in Section 6)
nb mice

Route Inoculated
ic and sc

Reisolation
No

Other Reasons

Repeated isolations of the virus from the same locality (Shimoga Dist) and from the same source (H. spinigera)

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) 1:200	After Treatment Titer 2.5 dex	Control Titer 5.7 dex
Other (formalin, radiation)		

Virion Morphology

Shape	Dimensions 100 - 220 nm	
Mean nm	Range nm	
Measurement Method Millipore filtration (3)	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, acetone-ether +
prot. Sulphate**

Erythrocytes (species used)

Goose

pH Range

6.2-7.2

pH Optimum

Temperature Range

37dC, 4dC, and 24-26dC

Temperature Optimum

Remarks

Serologic Methods Recommended

CF, NT

Footnotes

Employing Kaisodi antiserum prepared in mice, HI tests were carried out with 8 units of each of the following antigens:

Group A:	EEE, WEE, VEE, Mayaro, chikungunya, Semliki Forest, Sindbis, Getah, Bebaru, Middelburg, Aura;
Group B:	yellow fever, Wesselsbron, Zika, Banzi, Spondweni, West Nile, dengue 2, MVE, Ntaya, RSSE, Powassan, St. Louis, JE;
Others:	Ilesha, Bunyamwera, Germiston, California, Tahyna, Marituba, Oriboca, Caraparú; Bwamba, Sathuperi, Ketapang, Bakau, Neapolitan and Sicilian sandfly fevers, Akabane, Manzanilla, Witwatersrand and Koongol.

The serum failed to inhibit agglutination at a dilution of 1:10 or higher.

In CF tests, there was no cross-reaction between Kaisodi and any of the following tickborne viruses: Quarantfil, Chenuda, Nyamanini (EgAr 1304), Wad Medani, Ganjam (IG 619), Wanowrie, Silverwater, Colorado tick fever, Hughes virus and Kemerovo. There was some cross-reaction between Kaisodi and a Malayan virus, strains Lanjan and TP 123, obtained from Dr. Gordon Smith. This cross-reaction could be detected by CF as well as HI tests.

Antisera	Antigens			
	Kaisodi		Lanjan (TP 94)	
	CF	HI	CF	HI
Kaisodi	512/1024		32/8	160
Lanjan	8/8		128/512	320

The KSO serogroup presently consists of Lanjan and Silverwater viruses in addition to Kaisodi virus. These serogroup viruses are considered as possible members of the Bunyaviridae family [8] and therefore, are listed taxonomically as "bunyavirus-like".

Section VI - Biologic Characteristics

Virus Source (all VERTEBRATE isolates)
Blood (M)

Lab Methods of Virus Recovery (ALL ISOLATIONS)
Newborn mice

Cell system (a)	Virus passage history (b)	Evidence of Infection						
		CPE			PLAQUES			Growth Without CPE +/- (g)
		Day (c)	Extent (d)	Titer TCD50/ml (e)	Day (c)	Size (f)	Titer PFU/ml (e)	
LLC-MK2 (CL)	P-2				6	2 mm	>7.7* (5)	
Vero (CL)						No plaques (6)		
Aedes albopictus (CL)			No multiplication					- (5)
Ae aegypti (CL)			No multiplication					- (5)

* Expressed in dex

Vertebrate (species and organ) and arthropod	No. isolations/No. tested	No. with antibody/No. tested Test used	Country and region
Haemaphysalis spinigera	30/>30,000		Shimoga District, Mysore State, India
Zoothera citrina (ground thrush; serum)	1		Shimoga, Mysore, India (7)
Man		0/204 NT	Shimoga District, Mysore State, India
Small mammals (all collected before 1960)		0/69 NT	
Haemaphysalis turturis	2		Mysore State, India (7)

Experimental host and age	Passage history and strain	Inoculation Route-Dose	Evidence of infection	AST (days)	Titer log ₁₀ /ml	
Mice (nb)	G14132, P-7	ic 0.02	Illness and death	5.7	5.2	
Mice (nb)		ip 0.03	Illness and death	>11.7		
Mice (nb)		sc				
Mice (wn)		ic 0.03			9.5	1.4
Mice (wn)		ip 0.2				5.5
Mice		ic	No viremia but illness (6)			
Mice		ip	Viremia, days 3 and 7 (6)			
Mice		iv	Viremia after 4 hr and 1 day (6)			
white leghorn chicks (1-2 day)		im 0.1	No illness, no viremia; 1/10 NT antibodies.			
rabbits (ad)		ip 1.0	No illness, no viremia; 1/2 NT antibodies.			
guinea pigs (ad)	ip 0.2	No illness, no viremia; 2/2 NT antibodies.				

Section XIII - References

1. Bhatt, P.N., et al. 1966. Am. J. Trop. Med. and Hyg. 15:958-960.
2. Pavri, K. and Casals, J. 1966. Am. J. Trop. Med. and Hyg. 15:961-963.
3. Casals, J. 1968. Nature 217:648-649.
4. Singh, K.R.P. and Paul, S.D. 1968. Indian J. Med. Res. 56:815-820.
5. Stim, T.B. 1969. J. Gen. Virol. 5:329-338.
6. Virus Research Centre, Poona, India. 1968. Unpublished data.
7. Virus Research Centre, Poona, India. 1969. Unpublished data.
8. Mathews, R.E.F. 1982. Intervirology 17:115-118.

Remarks