

Status: Possible Arbovirus

Select Agent:

SALS Level: 2

SALS Basis: S

Antigenic Group: Kemerovo

HEPA Filtration:

Taxonomic status: *Orbivirus*

Other Information: None.

**Section I - Full Virus Name and Prototype Number****Full Virus Name:****Prototype Number:****Bauline**

CanAr 14

**Information from:** Andrew J. Main, Jr.; revised**Date:**

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7/18/1984

**Address:** Yale Arbovirus Research Unit; 60 College St., New Haven, CT 06510, USA

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Revised

**Section II - Original Source****Isolated by:** A.J. Main, Jr.**at:** YARU**Genus and species:** *Ixodes uriae* (= *Ixodes putus*)**Sentinel X****Age/Stage:** Nymphs      **Sex:** ?

Isolated From	Isolation detail
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**Signs and symptoms of illness:****Arthropod engorged:** X      **depleted**      **gravid****Time held alive before inoculation:** 9 days**Collection date:** 7/23/1971      **Method:** By hand**Place collected:** Great Island, Newfoundland, Canada**Latitude:** 47° 11' " N      **Longitude:** 53° 8' " W**Macrohabitat:** Rocky island**Microhabitat:** Substrate from puffin (*Fratercula arctica*) burrows**Method of storage until inoculated:** Alive for 9 days, then frozen at -60dC for 12 days**Footnotes:****Section III - Method of Isolation and Validity****Inoculation Date:** 8/13/1971**Animal:** nb mice      **Embryonated egg:**      **Tissue Culture:**

(Details in Section VI - Biologic Char.)

**Route inoculated:** Intracerebral      **Reisolation:** No**Other reasons:** Five additional isolates from *Ixodes uriae* on Great Island in 1972**Homologous antibody formation by source animal (See Section II):****Test used:** HI      CF      NT**Other:****Footnotes:**

## Section IV - Virus Properties

### Physicochemical:

RNA: X      DNA:      Single Strand:      Double Strand: X  
Pieces: 10 (2)      Infectivity:      Sedimentation coefficient(s): /strong>  
Percentage wt. of virion protein      , lipid      carbohydrate  
Virion polypeptides:  
Number:      Details:  
Non-virion polypeptides:  
Number:      Details:  
Virion density:      Sedimentation coefficient:  
Nucleocapsid density      Sedimentation coefficient:

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### Stability of infectivity (effects) pH pH 3.0: <1.5 dex; pH 7.2: 7.7 dex

Lipid solvent:  
(ether) 1:2      After treatment titer 3.9 dex      Control titer 7.8 dex  
(chloroform) 1:2      After treatment titer 3.7 dex      Control titer 7.8 dex  
Detergent:  
(deoxycholate) 1:1000; 1:500; 1:100 After treatment titer 5.2; 2.6; 2.0 dex Control titer 4.7 dex  
Other (formalin, radiation):

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### Virion morphology:

Shape      Dimensions <220 nm  
Mean (nm)      range (nm)      how measured Filtration  
Surface projections, envelope  
Nucleocapsid dimensions, symmetry

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### Morphogenesis:

Site of constituent formation in cell  
Site of virion assembly  
Inclusion bodies  
Other

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### Hemagglutination:

Hemagglutination No      Antigen source SMB ext. by sucrose-acetone  
Erthrocytes Goose      pH range 5.8-7.0      pH optimum  
Temperature optimum      range 4dC, 22dC, 37dC  
Remarks  
Serologic methods recommended CF, NT  
Footnotes:

**Section V - Antigenic Relationship And Lack of Relationship To Other Viruses**

**BAULINE (CanAr 14)**

Virus (strain)	Antigen			Ascitic Fluid		
	CF Ht/Ho	Ratio	NT Ht/Ho	CF Ht/Ho	Ratio	NT Ht/Ho
Great Island (CanAr 41)	128/128	1/1	0.4/3.4	128/128	1/1	0.2/2.7
Tindholmur (DenAr 2)	32/32	1/1	1.0/2.4	128/128	1/1	0.0/3.0
Mykines (DenAr 12)	8/256	1/32	<1.1/2.6	128/128	1/1	0.0/3.0
Cape Wrath (ScotAr 20)	32/64	1/2	0.0/3.3	64/128	1/2	0.3/1.9
(FinV-808)	256/1024	1/4		64/128	1/2	
(FinV-873)	128/256	1/2		128/128	1/1	
(FinV-962)	64/64	1/1		64/128	1/2	
Yaquina Head (RML 15)	16/32	1/2	0.3/3.7	64/128	1/2	0.7/2.7
Yaquina Head (RML 62)	128/64	2/1		8/32	1/4	1.2/2.1
Okhotskiy (LEIV 287ka)	<4/32	<1/8	<1.0/3.3			0.2/2.4
Nugget (AusMI-14847)	128/512	1/4	0.0/3.2	128/128	1/1	0.7/2.4
Kemerovo (R-10)	32/256	1/8	0.1/5.2	64/128	1/2	0.1/1.9
Lipovnik (Lip 91)	32/128	1/4		32/128	1/4	
Tribec (original)	16/128	1/8	0.0/2.7	32/128	1/4	0.3/1.9
Chenuda (EgAr 1152)	<4/256	<1/64		<4/128	<1/32	
Mono Lake (CalAr 861)	8/256	1/32		<4/128	<1/32	
Huacho (CalAr 883)	<4/256	<1/64		<4/128	<1/32	
Wad Medani (EgAr 492)	<4/256	<1/64		<4/128	<1/32	

CF: Heterologous serum CF titer/homologous serum CF titer

NT: Heterologous LNI in dex/homologous LNI

## Section VI - Biologic Characteristics

Virus source (all VERTEBRATE isolates):

Lab Methods of Virus Recovery (ALL ISOLATIONS): Newborn mice

Susceptibility of Cell Culture Systems:

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)		
Vero (CL)	P-3				3	Plaques	6.0*		

\* Expressed in dex

## Section VII - Natural Host Range

Vertebrate (species and organ) and arthropod	No. isolations/No. tested	No. with antibody/No. tested Test used	Country and region
Ixodes (Ceratixodes) uriae 41; (= I. putus)			Great Island, Newfoundland, Canada; 1971, 1972(1, 3)
eggs	0/227/3 *		
larvae	0/48/6		
nymphs	2/479/60		
adult males	1/105/14		
adult females	3/356/60		
Larus argentatus (chicks)	0/84	0/28 NT	
Larus marinus (chicks)	0/2	0/2 NT	
Rissa tridactyla (chicks)	0/15		
Uria aalge (chicks)	0/3		
Fratercula arctica (chicks)	0/20		
Fratercula arctica (adults)		47/126 NT	
Oceanodroma leucorhoa (adults)		5/128 NT	

\* Number of isolates/number of ticks/number of pools

## Section VIII - Susceptibility To Experimental Infection (Record Viremia)

Experimental host and age	Passage history and strain	Inoculation Route-Dose	Evidence of infection	AST (days)	Titer log <sub>10</sub> /ml	
Mice (nb)	CanAr 14, SMB 2-3	ic 0.02	Paralysis, death(4)	3-4	6.0-7.7	
Mice (nb)	SMB 4	ip 0.02	Paralysis, death	4-5	7.1	
Mice (nb)		sc				
Mice (wn)		ic 0.03	None			
Mice (wn)		ip 0.03	None			
chicks (1 day)	SMB 3	ic 0.03	Paralysis, death	2-4	5.1	

"" (1 day)		sc 0.03	Paralysis, death	3-5		
"" (2 day)	SMB 4	ic	No viremia or NT antibody			
"" (2 day)		sc	No viremia or NT 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
Aedes aegypti		4.1	2-10	28			negative		nb mice (3,4)
Culex pipiens quinquefasciatus		4.5	2-10	28			negative		nb mice
Anopheles quadrimaculatus		4.1	2-12	28			negative		nb mice

## Section X - Histopathology

Character of lesions:

Inclusion bodies:

Cytoplasmic:(M) (LV) Intranuclear: (M) (LV)

Organs-tissues affected:

Category of tropism:

## Section XI - Human Disease

Human disease:	In nature:	(S)	(R)
	Death:	(S)	(R)
	Residua:	(S)	(R)
Laboratory infections:	Subclinical:	(S)	(R)
	Overt Disease:	(S)	(R)

Clinical manifestations:

Category: No. of cases:

## Section XII - Geographic Distribution

Known (virus):

Newfoundland, Canada

## Section XIII - References

1. Main, A.J., et al. 1973. J. Med. Ent. 10:229-235.
2. Knudson, D.L. Personal communication. 1980.
3. Main, A.J., et al. 1976. J. Wildlife Dis. 12:182-194.
4. Main, A.J., et al. 1976. J. Med. Ent. 13:304-308.

## Section XIV - Remarks