

Virus Name: Great Island	Abbreviation: GIV	
Status <b>Possible Arbovirus</b>	Select Agent No	SALS Level <b>2</b>
SALS Basis <b>Results of SALS surveys and information from the Catalogue.</b>		
Other Information		
Antigenic Group <b>Kemerovo</b>		

#### SECTION I - Full Virus Name and Prototype Number

Prototype Strain Number / Designation <b>CanAr 41</b>	Accession Number	Original Date Submitted <b>7/19/1984</b>
Family <b>Reoviridae</b>	Genus <b>Orbivirus</b>	
Information From <b>Andrew J. Main, Jr.</b>	Address <b>Yale Arbovirus Research Unit (YARU), 60 College St., New Haven, CT 06510, USA</b>	
Information Footnote <b>Revised</b>		

#### Section II - Original Source

Isolated By (name) <b>A.J. Main, Jr (1)</b>	Isolated at Institute <b>YARU</b>	
Host Genus <b>Ixodes uriae (=I. putus)</b>	Species	Host Age/Stage <b>Nymphs</b>
Sex <b>Not Answered</b>		
<u>Isolated From</u> <u>Isolation Details</u>		
Signs and Symptoms of Illness	Arthropod <b>Engorged</b>	
Time Held Alive before Inoculation <b>5 days</b>		
Collection Method <b>By hand</b>	Collection Date <b>6/27/1971</b>	
Place Collected (Minimum of City, State, Country) <b>Great Island, Newfoundland, Canada</b>		
Latitude <b>47° 11' N</b>	Longitude <b>53° 8' W</b>	
Macrohabitat <b>Rocky island</b>	Microhabitat <b>Substrate from puffin (Fratercula arctica) burrows</b>	Method of Storage until Inoculated <b>Alive for 5 days, then frozen at -70dC for 17 days</b>
Footnotes		

### Section III - Method of Isolation

Inoculation Date  
8/18/1971

Animal (Details will be in Section 6)  
**nb mice**

Route Inoculated  
**Intracerebral** Reisolation  
**Yes**

Other Reasons  
**Six additional isolates from Great Island**

Homologous Antibody Formation by Source Animal  
**Not tested**

Test(s) Used

Footnotes

### Section IV - Virus Properties

Physicochemical  
**RNA, Double Strand**

Pieces (number of genome segments)	Infectivity	Sedimentation Coefficients(s) (S)
<b>10 (2)</b>		
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)  
**pH 3.0 <1.5 dex pH 72. 8.4 dex**

Lipid Solvent (ether - % used to test) <b>1:2</b>	After Treatment Titer <b>3.0 dex</b>	Control Titer <b>4.7 dex</b>
Lipid Solvent (chloroform) <b>1:2</b>	After Treatment Titer <b>&lt;2.7 dex</b>	Control Titer <b>4.7 dex</b>
Lipid Solvent (deoxycholate) <b>1:1000; 1:500; 1:100</b>	After Treatment Titer <b>4.8; 2.6; 2.7 dex</b>	Control Titer <b>4.9 dex</b>
Other (formalin, radiation)		

#### Virion Morphology

Shape	Dimensions	
Mean <b>&lt;0.22 nmnm</b>	Range nm	
Measurement Method	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 <b>SMB ext. by sucrose-acetone</b>	Erythrocytes (species used) Goose
pH Range 5.8-7.0	pH Optimum	
Temperature Range 4dC; 22dC; 37dC	Temperature Optimum	
Remarks		
Serologic Methods Recommended NT, CF		
Footnotes		

Virus (strain)	Great Island (CanAr 41)				Ascitic Fluid		
	Antigen/Virus		NT Ht/Ho	CF Ht/Ho	Ascitic Fluid		NT Ht/Ho
	CF Ht/Ho	Ratio			CF Ht/Ho	Ratio	
Bauline (CanAr 14)	128/128 *	1/1	0.2/2.7 **	128/128	1/1		0.4/3.4
Tindholmur (DenAr 2)	64/32	2/1	0.2/2.4	128/128	1/1		0.5/2.7
Mykines (DenAr 12)	32/256	1/8	0.5/2.6	64/128	1/2		0.0/2.7
Cape Wrath (ScotAr 20)	16/64	1/4	0.6/3.3	64/32	2/1		0.1/3.0
(FinV-808)	512/1024	1/2		64/128	1/2		
(FinV-873)	128/256	1/2		128/128	1/1		
(FinV-962)	64/64	1/1		128/128	1/1		
Yaquina Head (RML 15)	16/32	1/2	0.3/2.9	64/128	1/2		0.6/3.4
Yaquina Head (RML 62)	64/128	1/2		16/64	1/4		
Okhotskiy (LEIV 287ka)	8/32	1/4	0.8/3.3				0.5/2.7
Nugget (AusMI-14847)	128/512	1/4	0.0/3.2	256/128	2/1		0.3/2.7
Kemerovo (R-10)	32/256	1/8	0.6/5.4	64/128	1/2		0.0/2.3
Lipovnik (Lip 91)	32/128	1/4		32/128	1/4		
Tribec (original)	16/128	1/8	0.4/3.1	32/128	1/4		0.1/2.3
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		<4/12	<1/32		

\* Heterologous serum titer/homologous serum titer

\*\* Heterologous LNI/homologous LNI; LNI given in dex

## 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						Growth Without CPE	
		CPE			PLAQUES				
		Day (c)	Extent (d)	Titer TCD50/ml (e)	Day (c)	Size (f)	Titer PFU/ml (e)		
Vero (CL)	P-5					1-3 mm	6.3(a) (3)		
Vero (CL)	P-4				3		6.0		
MA-111 (CL)	P-5					1-3 mm (3)			
Duck embryo(PC)						No plaques (3)			

(a) 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
Ixodes (Ceratixodes) uriae White (= <i>I. putus</i> Pick.-Camb.)			Great Island, Newfoundland Canada 1971, 1972 (1, 4))
eggs	0/227/3 *		
larvae	0/48/6		
nymphs	4/479/60		
adult males	0/105/14		
adult females	3/356/60		
<i>Larus argentatus</i> (chicks)	0/84	0/28 NT	
<i>Larus marinus</i> (chicks)	0/2	0/2 NT	
<i>Rissa tridactyla</i> (chicks)	0/15		
<i>Uria aalge</i> (chicks)	0/3		
<i>Fratercula arctica</i> (chicks)	0/20		
<i>Fratercula arctica</i> (ad)		49/119 NT	
<i>Oceanodroma leucorhoa</i> (ad)		6/104 NT	

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

**Section VIII - Susceptibility to Experimental Infection (include viremia)**

<b>Experimental host and age</b>	<b>Passage history and strain</b>	<b>Inoculation Route-Dose</b>	<b>Evidence of infection</b>	<b>AST (days)</b>	<b>Titer log10/ml</b>	
Mice (nb)	CanAr 41, P 2-5	ic 0.02	Paralysis, death(5)	2-4	5.4-8.5	
Mice (nb)	P-4	ip 0.02	Paralysis, death	5-6	9.1	
Mice (nb)		sc				
Mice (wn)		ic 0.03	Death	4-6	5.7	
Mice (wn)		ip 0.03	None			
chicks (nb)	P-3	ic 0.03	Paralysis, death	1-3	6.8	
chicks (nb)		sc 0.03	Paralysis, death	3-6		
chicks (nb)	P-5	ic	No viremia; no NT antibody			
chicks (nb)		sc	No viremia; no NT antibody			

**Section IX - Experimental Arthropod Infection and Transmission**

<b>Arthropod species &amp; virus source(a)</b>	<b>Method of Infection log10/ml (b)</b>		<b>Incubation period (c)</b>		<b>Transmission by bite (d)</b>		<b>Assay of arthropod, log10/ml (e)</b>		
	<b>Feeding</b>	<b>Injected</b>	<b>Days</b>	<b>°C</b>	<b>Host</b>	<b>Ratio</b>	<b>Whole</b>	<b>Organ</b>	<b>System</b>
Culex pipiens quinquefasciatus		4.5	2-10	28			negative		suckling mice(5)

## 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
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Subclinical	Overt Disease
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Clinical Manifestations

Number of Cases	Category (i.e. febrile illness, etc.)
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## Section XII - Geographic Distribution

Known (Virus detected)

**Newfoundland, Canada**

Suspected (Antibody only detected)

## Section XIII - References

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

## Remarks