

<b>Virus Name: Great Island</b>		<b>Abbreviation: GIV</b>
Status <b>Possible Arbovirus</b>	Select Agent <b>No</b>	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 (Fraterecula 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 <b>Intracerebral</b>	Reisolation <b>Yes</b>
--	---------------------------

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) <b>10 (2)</b>	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)  
**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 <b>No</b>	Antigen Source <b>SMB ext. by sucrose-acetone</b>	Erythrocytes (species used) <b>Goose</b>
-------------------------------	--	---

pH Range <b>5.8-7.0</b>	pH Optimum
----------------------------	------------

Temperature Range <b>4dC; 22dC; 37dC</b>	Temperature Optimum
---	---------------------

Remarks

Serologic Methods Recommended  
**NT, CF**

Footnotes

Virus (strain)	Great Island (CanAr 41)					
	Antigen/Virus			Ascitic Fluid		
	CF		NT	CF		NT
Ht/Ho	Ratio	Ht/Ho	Ht/Ho	Ratio	Ht/Ho	
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

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 +/- (g)
		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

Vertebrate (species and organ) and arthropod	No. isolations/No. tested	No. with antibody/No. tested Test used	Country and region
Ixodes (Ceratiixodes) uriae White (= I. putus 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		
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		
Fratereula arctica (chicks)	0/20		
Fratereula arctica (ad)		49/119 NT	
Oceanodroma leucorhoa (ad)		6/104 NT	
* Number of isolates/number of ticks/number of pools			

**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 log <sub>10</sub> /ml
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)	P-3	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**

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

**Section X - Histopathology**

Character of lesions (specify host)		
<u>Inclusion Bodies</u>	<u>Intranuclear</u>	
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) <b>Newfoundland, Canada</b>
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**

--