Virus Name: Cape Wrath	Abbreviation: CWV

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
ScotAr 20

Accession Number

Original Date Submitted
7/18/1984

Family
Reoviridae

Genus
Orbivirus

Information From
Andrew J. Main

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

Information Footnote
Revised

Section II - Original Source

Isolated By (name)
A.J. Main

Isolated at Institute
YARU

Host Genus
Ixodes uriae (=Ixodes putus)

Species

Host Age/Stage
Adult

Sex
Female

Isolated From

Isolation Details

Signs and Symptoms of Illness

Arthropod
Engorged

Time Held Alive before Inoculation
11 to 20 days

Collection Method
Collected by hand from under rocks

Collection Date
6/20/1973

Place Collected (Minimum of City, State, Country)
Clo Mor, Cape Wrath, Scotland

Latitude
58° 36' N

Longitude
4° 53' W

Macrohabitat
Murre (Uria aalge) colony

Microhabitat
Rocky ledge

Method of Storage until Inoculated
Held alive

Footnotes

Section III - Method of Isolation

Inoculation Date
7/6/1973

Animal (Details will be in Section 6)
nb mice

Route Inoculated
Intracerebral

Reisolation
Yes

Other Reasons

Homologous Antibody Formation by Source Animal

Test(s) Used

Footnotes

Section IV - Virus Properties

Physicochemical
RNA, Double Strand

Pieces (number of genome segments)
10 (2)

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 7.2: 5.9 dex

Lipid Solvent (ether - % used to test)
1:2

After Treatment Titer
5.2 dex

Control Titer
5.7 dex

Lipid Solvent (chloroform)
1:2

After Treatment Titer
5.2 dex

Control Titer
5.7 dex

Lipid Solvent (deoxycholate)
1:1000;1:500;1:100

After Treatment Titer
5.7; 2.7; 2.3 dex

Control Titer
6.5 dex

Other (formalin, radiation)

Virion Morphology

Shape

Dimensions
<220 nm

Mean
nm

Range
nm

Measurement Method
Filtration

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 **No**	Antigen Source **SMB ext. by sucrose-acetone**	Erythrocytes (species used) **Goose**
pH Range **5.8-7.4**	pH Optimum	
Temperature Range **4dC, 22dC, 37Cd**	Temperature Optimum	

Remarks

Serologic Methods Recommended
CF, NT

Footnotes

CAPE WRATH (ScotAr 20)

		Antigen			Ascitic Fluid		
		CF		NT	CF		NT
		Ht/Ho	Ratio	Ht/Ho	Ht/Ho	Ratio	Ht/Ho
Great Island	(CanAr 41)	64/32	2/1	0.1/3.0	16/64	1/4	0.6/3.3
Bauline	(CanAr 14)	64/128	1/2	0.3/1.9	32/64	1/2	0.0/3.3
Tindholmur	(DenAr 2)	64/32	2/1	0.0/2.4	64/32	2/1	0.0/2.6
Mykines	(DenAr 12)	32/256	1/8	0.9/2.6	64/32	2/1	0.0/2.6
	(FinV-808)	512/1024	1/2		64/32	2/1	
	(FinV-873)	128/256	1/2		64/32	2/1	
	(FinV-962)	128/64	2/1		64/32	2/1	
Yaquina Head	(RML 15)	16/64	1/4	0.7/2.8	16/64	1/4	0.5/3.3
Nugget	(MI-14847)	64/256	1/4	0.3/1.8	64/64	1/1	0.4/3.3
Kemerovo	(R 10)	<4/32	<1/8		4/64	1/16	
Lipovnik	(Lip 91)	4/64	1/16		4/64	1/16	
Tribec	(original)	8/32	1/4		8/64	1/8	
Chenuda	(EgAr 1152)	<4/32	<1/8		<4/64	<1/16	
Mono Lake	(CalAr 861)	<4/64	<1/16		<4/64	<1/16	
Huacho	(CalAr 883)	<4/16	<1/4		<4/64	<1/16	
Wad Medani	(EgAr 492)	<4/16	<1/4		<4/64	<1/16	

NT: 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							
		CPE			PLAQUES			Growth Without CPE	
		Day (c)	Extent (d)	Titer TCD50/ml (e)	Day (c)	Size (f)	Titer PFU/ml (e)	+/- (g)	
Vero (CL)	P-3				3	Plaques	8.0 *		

* 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 (= Ixodes putus Pick.-Camb.)			Scotland;, Wales; 1973, 1974
eggs	0/1/50 *		
larvae	0/1/2		
nymphs	0/13/89		
adult males	0/2/2		
adult females	1/20/97		

* Number of isolates/number of pools/number of specimens

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)	ScotAr 20, P-2-3	ic 0.02	Paralysis, death	3-4	8.0-9.0
Mice (nb)	P-2	ip 0.02	Paralysis, death	3-8	9.5
Mice (nb)		sc			
Mice (wn)		ic 0.03	None, no CF or NT antibody		
Mice (wn)		ip 0.03	None, no CF or NT antibody		
chicks (1-2 day)	P-2-3	ic 0.03	None, no viremia or NT antibody		
chicks (1-2 day)		sc 0.03	None, 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		p.3; 4.8	0-14	28			Negative		Suckling mice
Culex pipiens quinquefasciatus		p.3; 4.8	0-14	28			Negative		Suckling mice
Anopheles quadrimaculatus		p.3; 4.8	0-14	28			Negative		Suckling mice

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)
Scotland

Suspected (Antibody only detected)

Section XIII - References

1. Main, A.J., et al. 1977. J. Med. Ent. 13:304-308.
2. Knudson, D.L. Personal communication. 1980.

Remarks