

<b>Virus Name: Yaquina Head</b>		<b>Abbreviation: YHV</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>15</b>	Accession Number	Original Date Submitted <b>11/27/1984</b>
Family <b>Reoviridae</b>	Genus <b>Orbivirus</b>	
Information From <b>C.E. Yunker</b>	Address <b>Rocky Mountain Laboratory, Hamilton, Montana, 59840, USA</b>	
Information Footnote <b>Reviewed by editor</b>		

**Section II - Original Source**

Isolated By (name) <b>C.E. Yunker, et al. (1)</b>	Isolated at Institute <b>Rocky Mountain Laboratory</b>	
Host Genus <b>Ixodes uriae</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		
Collection Method <b>By hand</b>	Collection Date <b>8/19/1970</b>	
Place Collected (Minimum of City, State, Country) <b>Yaquina Head, Lincoln Co., Oregon, USA</b>		
Latitude <b>44° 40' N</b>	Longitude <b>124° 5' W</b>	
Macrohabitat <b>Offshore rock serving as bird-nesting area</b>	Microhabitat <b>In soil at roots of vegetation (Phalaris grass)</b>	Method of Storage until Inoculated <b>Held alive in humidified vials at ambient temperature</b>
Footnotes		

**Section III - Method of Isolation**

Inoculation Date  
**8/26/1970**

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

Route Inoculated <b>Intracerebral</b>	Reisolation <b>Yes</b>
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Other Reasons  
**Eight additional isolations of this virus from other pools of ticks**

Homologous Antibody Formation by Source Animal

Test(s) Used

Footnotes

**Section IV - Virus Properties**

Physicochemical  
**RNA**

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)  
**Sensitive to acid pH; resistant to 10<sup>-5</sup> M bromodeoxyuridine (1)**

Lipid Solvent (ether - % used to test) <b>1:2</b>	After Treatment Titer <b>&lt;2.25 dex</b>	Control Titer <b>6.38 dex</b>
Lipid Solvent (chloroform)	After Treatment Titer	Control Titer
Lipid Solvent (deoxycholate) <b>1:100</b>	After Treatment Titer <b>8.2 dex</b>	Control Titer <b>9.1 dex</b>
Other (formalin, radiation)		

**Virion Morphology**

Shape	Dimensions <b>50-220 nm</b>	
Mean nm	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      Antigen Source      Erythrocytes (species used)  
**No**      **SMB ext. by sucrose-acetone**      **Chick**

pH Range      pH Optimum  
**6.0-7.0**

Temperature Range      Temperature Optimum  
**4dC, 22dC, and 37dC**

Remarks

Serologic Methods Recommended  
**CF, NT**

Footnotes

### **Section V - Antigenic Relationship and Lack of Relationship to Other Viruses**

Yaquina Head antigen did not react in CF with immune sera of 91 viruses [1] but did react with Kemerovo immune serum. In other CF tests Chenuda antigen reacted with Yaquina Head immune serum:

Immune Sera	Yaquina Head Antigen (or Virus)			
	CF Ht/Ho	Ratio	SMNT Ht/Ho	PRNT Ht/Ho
Yaquina Head (62)	32/128 *	1/4	2.3/2.0 *	
Yaquina Head (15)	64/32	2/1	3.0/2.2	4.1/3.6
Kemerovo (R 10)	32/256> *	1/8> *	1.0/4.3 *	
	32/256>	1/8>	0.6/4.3	
Tribec				1.1/4.0
Chenuda (Ar 1170)	0/64	0/64	0.0/5.5 *	1.2/>2.2
			0.0/5.5	

\* Indicates antigen used in heterologous test was Yaquina Head strain 15; otherwise it was strain 62.

**Yaquina Head Immune Serum \***

Antigen (or Virus)	CF		SMNT Ht/Ho	PRNT Ht/Ho
	Ht/Ho	Ratio		
Yaquina Head (62)	64/128 *	1/2 *		3.6/4.0 *
Yaquina Head (15)	32/32	1/1		
Kemerovo (R 10)	4/256> *	1/64> *	0.3/3.0 *	1.0/4.0 *
	16/256>	1/16>	0.9/3.0	
Tribec				1.0/4.0 *
Chenuda (Ar 1170)	8/64 *	1/8 *	0.1/3.0 *	
	32/64	1/2		

\* Indicates serum used was Yaquina Head strain 15; otherwise it was strain 62.

SMNT, PRNT: Log neutralization indices 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 +/- (g)
		Day (c)	Extent (d)	Titer TCD50/ml (e)	Day (c)	Size (f)	Titer PFU/ml (e)	
Vero (CL)			CPE		5	Plaques	6.6**	
BHK-21 (CL)			CPE			Plaques		

\* 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 uriae	9/96 pools (approximately 1,000 ticks)		Oregon, USA
Ixodes uriae	1*		St. Lawrence Island, Alaska, USA (1)

\* Same virus as Yaquina Head virus, or very closely related to it.

**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)	SM 3 V1	ic 0.02	Death	4.4	7.1
Mice (nb)		ip	Not pathogenic		
Mice (nb)		sc			
Mice (wn)		ic	Not pathogenic		
Mice (wn)		ip	Not pathogenic		

**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

**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)

**Oregon, USA.**

Suspected (Antibody only detected)

**Section XIII - References**

1. Yunker, C.E., et al. 1973. J. Med. Ent. 10:264-269.

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