Virus Name: Eyach	Abbreviation: EYAV

Status
Possible Arbovirus

Select Agent
No

SALS Level
2

SALS Basis
Results of SALS surveys and information from the Catalogue.

Other Information

Antigenic Group
Colorado Tick Fever

SECTION I - Full Virus Name and Prototype Number

Prototype Strain Number / Designation
Eyach 38

Accession Number

Original Date Submitted
8/22/1984

Family
Reoviridae

Genus
Orbivirus

Information From
R. Ackermann and B. Rehse-Kupper

Address
Dept. of Virology, Neurology Clinic, University of Cologne,Germany

Information Footnote
Reviewed by editor

Section II - Original Source

Isolated By (name)
B. Rehse-Kupper

Isolated at Institute
Dept. of Virology, Neurology Clinic

Host Genus
Ixodes ricinus

Species

Host Age/Stage
Imagoes

Sex
Male

Isolated From

Isolation Details

Signs and Symptoms of Illness

Arthropod

Time Held Alive before Inoculation

Collection Method
Flagging the vegetation

Collection Date
5/13/1972

Place Collected (Minimum of City, State, Country)
Eyach, B.-W., West Germany

Latitude
48° 27' N

Longitude
8° 41' E

Macrohabitat
Mixed woodland

Microhabitat

Method of Storage until Inoculated
In glass tube at +4dC

Footnotes

Section III - Method of Isolation

Inoculation Date
6/6/1972

Animal (Details will be in Section 6)
nb mice

Route Inoculated
ic and sc

Reisolation
No

Other Reasons
Only virus of its type in the laboratory.

Homologous Antibody Formation by Source Animal

Test(s) Used

Footnotes

Section IV - Virus Properties

Physicochemical

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)

Lipid Solvent (ether - % used to test) **1:4**	After Treatment Titer **>6.4 dex**	Control Titer **6.6 dex**
Lipid Solvent (chloroform)	After Treatment Titer **<2.5 dex**	Control Titer **6.9 dex**
Lipid Solvent (deoxycholate) **1:1000**	After Treatment Titer **>6.4 dex**	Control Titer **>6.4 dex**

Other (formalin, radiation)

Virion Morphology

Shape	Dimensions **>100 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 **6.0-7.0**	pH Optimum	
Temperature Range	Temperature Optimum	
Remarks		
Serologic Methods Recommended **CF, NT**		
Footnotes		

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

Complement-fixation test. An antiserum for Eyach with a homologous titer of 32 was tested against antigens for 49 non-group B tick-borne viruses; the serum reacted only with Colorado tick fever (CTF) antigen, with a titer of 16.
In another test, 15 polyvalent grouping sera or ascitic fluids were tested against an antigen for Eyach; only the fluid containing CTF antibodies reacted with Eyach.
The CF relationship between CTF and Eyach is as follows:

Antigen	Serum	
	Eyach	CTF
Eyach	128/128	64/64
CTF	32/64	256/512

Serum titer/antigen titer

Neutralization tests: In newborn mice, by intracerebral route ofinoculation.

Serum	Virus	
	Eyach	CTF
Eyach	3.3 [a]	0.3
CTF	2.9	4.0
Normal		

[a] LNI expressed 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)	
Chick embryo(PC)	SMB 27			No CPE					
GMK (CL)	SMB 35			No CPE					
BHK-21 (CL)				No CPE					
Vero (CL)					7-9	Plaques	7.2 (b)(3)		
LLC-MK2 (CL)						No plaques (3)			
CER (CL)						No plaques (3)			

(b) 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 ricinus	1/42 pools		Eyach near Tubingen, Baden-Wurttemberg, West Germany
Ixodes ricinus, adult male	1		Near Saulges village, Mayenne, France (4)
Ixodes ventalloi larvae	1		

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)	SMB 37	ic 0.02	Death	6-8	8.5
Mice (nb)		ip 0.03	Death	7-13	8.5
Mice (nb)		sc			
Mice (wn)		ic 0.03	No disease		8.5
Mice (wn)	SMB 10	ip 0.25	No disease		
Mice (nb)	SMB 37	sc 0.03	Death	10-11	8.5

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

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

There is a possible serological association of Eyach virus with development of meningoencephalitis, menigopolyneuritis and polyradiculoneuritis in human beings (2,5,6). In one instance,it is. It is based on the detection of IgM and early IgG viral antibody in people with the disease (2).

Number of Cases — Category (i.e. febrile illness, etc.)

Section XII - Geographic Distribution

Known (Virus detected)

West Germany, France (4)

Suspected (Antibody only detected)

Section XIII - References

1. Rehse-Kupper, B., et al. 1976. Acta Virol. 20:339-342.
2. Frankova, V., et al. 1982. SB Lek (Czechoslovakia) 84:181-186.
3. Karabatsos, N. Unpublished data. 1984.
4. Chastel, C., et al. 1984. Arch. Virol. 82:161-171.
5. Malkova, D., et al. 1980. Acta Virol. 24:298.
6. Malkova, D., et al. 1982. Cs. Epidem. 31:15-20.

Remarks