| Virus Name: Razdan | Abbreviation: RAZV |
|---|---|

Status
**Possible Arbovirus**

Select Agent
**No**

SALS Level
**3**

SALS Basis
**Isufficient experience with virus; i.e., experience factor from SALS surveys was less than 500 in laboratory facilities with low biocontainment.**

Other Information

Antigenic Group
**Ungrouped**

## SECTION I - Full Virus Name and Prototype Number

Prototype Strain Number / Designation
**LEIV-2741Ar**

Accession Number

Original Date Submitted
8/21/1984

Family
**Bunyaviridae**

Genus
**Bunyavirus-like**

Information From
**D.K. Lvov**

Address
**Inst. of Virology, USSR Acad. of Med. Sciences, Gamaleya, 16, Moscow, USSR**

Information Footnote
**Reviewed by editor**

## Section II - Original Source

Isolated By (name)
**D.K. Lvov, et al. (1, 2)**

Isolated at Institute
**Inst. of Virology, Moscow, USSR**

Host Genus
**Dermacentor marginatus, pool of 47 ticks**

Species

Host Age/Stage
**Adult**

Sex
**Female**

Isolated From

Isolation Details

Signs and Symptoms of Illness

Arthropod

Time Held Alive before Inoculation

Collection Method
**By hand**

Collection Date
**4/14/1973**

Place Collected (Minimum of City, State, Country)
**Razdansk Region, Armenian SSR, USSR**

Latitude
**40° 33' N**

Longitude
**44° 41' E**

Macrohabitat
**Pastureland**

Microhabitat
**From sheep**

Method of Storage until Inoculated
**Frozen at -50dC**

Footnotes

## Section III - Method of Isolation

Inoculation Date
**6/21/1973**

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

Route Inoculated
**Intracerebral**

Reisolation
**Yes**

Other Reasons
**Virus different from those existing in the laboratory**

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)

| | | |
|---|---|---|
| Lipid Solvent (ether - % used to test)<br>**50%** | After Treatment Titer<br>**0 dex** | Control Titer<br>**4.0 dex** |
| Lipid Solvent (chloroform) | After Treatment Titer | Control Titer |
| Lipid Solvent (deoxycholate)<br>**1:1000** | After Treatment Titer<br>**0 dex** | Control Titer<br>**4.0 dex** |

Other (formalin, radiation)

### Virion Morphology

| | | |
|---|---|---|
| Shape<br>**Spherical; bunyavirus-like (2)** | Dimensions<br>**100 nm** | |
| Mean<br>nm | Range<br>nm | |
| Measurement Method<br>**Electron microscopy** | 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 | Antigen Source | Erythrocytes (species used) |
|---|---|---|
| **Yes** | **SMB ext. by sucrose-acetone** | **Goose** |
| pH Range | pH Optimum | |
| **5.5-7.0** | **5.9** | |
| Temperature Range | Temperature Optimum | |
| **+4dC, +22dC** | **+22dC** | |

Remarks
*** Type of nucleic acid determined by sensitivity of the virus to 5-bromo-2-deoxyuridine**

Serologic Methods Recommended
**CF**

Footnotes
*** Type of nucleic acid determined by sensitivity of the virus to 5-bromo-2-deoxyuridine**

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

Razdan antigen in the CF test did not react with MIAF to the following arboviruses: group A (Polyvalent, Getah, Sindbis); group B (Polyvalent, Entebbe bat, Modoc, Murray Valley enc., Stratford, dengue, yellow fever, Jutiapa, Tyuleniy, Negishi, Royal Farm, Apoi, Koutango, Phnom-Penh bat, Usutu, Alfuy, Edge Hill, TBE, Powassan, Louping ill, Langat, KFD, Japanese enc., West Nile, Karshi, Kadam, St. Louis enc., Sokuluk); the California group (Tahyna); the CHF-CON group (CHF); the Bakau group (Polyvalent); the NSD group (Dugbe); the Kaisodi group (Kaisodi, Lanjan, Silverwater); the Kemerovo group (Kemerovo, Baku); the Quaranfil group (C-5502); the Turlock group (Turlock); the Hughes group (Hughes); the Uukuniemi group (Uukuniemi); Bhanja group (Bhanja); CTF group (CTF); DGK group (DGK); Nyamanini group (Nyamanini); Sawgrass group (Sawgrass); ungrouped (Wanowrie, Dhori, Lone Star, Matucare, Batken, Oyta, Issyk-Kul, Khasan, Artashat, Chim, Tamdy, Kaspiy). Ectromelia, LCM, reovirus, type 3 were serologically excluded. The then ungrouped Khasan virus is now a member of the CHF-CON group (ed.)

## 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) | | Virus multiplication without CPE; interference with WEE virus | | 4.6** | | | | + |
| Duck embryo (PC) | | Virus multiplication without CPE; interference with WEE virus | | 5.6 | | Plaques | | + |
| Human embryo fibroblasts (PC) | | Virus multiplication without CPE; interference with WEE virus | | 5.5 | | | | + |
| L cell cultures (CL) | | | CPE | 3.3 | | | | |
| A1, BHK-21 (CL) | | | No CPE | | | | | - |
| HEp-2 (CL) | | Virus multiplication without CPE; interference with WEE virus | | 3.0 | | | | + |
| Rh (CL) | | Virus multiplication without CPE; interference with WEE virus | | 1.5 | | | | + |
| HeLa (CL) | | Virus multiplication without CPE; interference with WEE virus | | 5.2 | | | | + |

** 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 |
|---|---|---|---|
| Dermacentor marginatus | 1/4 pools (290 ticks) | | Razdansk Region, Armenian SSR |

## 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 5 | ic 0.01 | Paralysis, death | 4-10 | 9.0 |
| Mice (nb) | | ip 0.10 | Paralysis, death | | |
| Mice (nb) | | sc | | | |
| Mice (wn) | | ic 0.03 | Paralysis, death | 5-14 | 7.0 |
| Mice (wn) | | ip 0.20 | Paralysis, death | 7-14 | 5.0 |
| Mice (ad) | | ip 0.20 | Paralysis, death | 8 | |
| rats (ad) | | ip 1.00 | Discrete encephalitis, formation of antibodies | | |
| rats (nb) | | ic 0.03 | Paralysis, death | 4-8 | 8.0 |
| guinea pigs, (ad) hamsters | | ip | 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 |
| | | | | | | | | | |
| | | | | | | | | | |

## 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)
**Razdansk Region, Armenian SSR, USSR**

Suspected (Antibody only detected)

## Section XIII - References

1. Lvov, D.K., et al. 1975. Proc. 18th Sci. Session of Inst. of Polio. And Virus Enceph. USSR AMS.
2. Lvov, D.K., et al. 1978. Acta Virol. 22:506-508.

| Remarks |
| --- |
| |