

<b>Virus Name: Junin</b>		<b>Abbreviation: JUNV</b>
Status <b>Not Arbovirus</b>	Select Agent <b>Yes</b>	SALS Level <b>4</b>
SALS Basis		
Other Information <b>DOC Permit Required, Hepa Filtration, Vaccination Recommended</b>		
Antigenic Group <b>Tacaribe</b>		

**SECTION I - Full Virus Name and Prototype Number**

Prototype Strain Number / Designation <b>XJ/1958</b>	Accession Number	Original Date Submitted <b>2/14/1985</b>
Family <b>Arenaviridae</b>	Genus <b>Arenavirus</b>	
Information From <b>Armando S. Parodi</b>	Address <b>Microbiology, School of Medicine, Paraguay 2155, Buenos Aires, Argentina</b>	
Information Footnote <b>Reviewed by editor</b>		

**Section II - Original Source**

Isolated By (name) <b>A. S. Parodi, et al. (1)</b>	Isolated at Institute <b>Buenos Aires, Argentina</b>	
Host Genus <b>Man</b>	Species	Host Age/Stage <b>Adult</b>
Sex <b>Male</b>		
<u>Isolated From</u>	<u>Isolation Details</u>	
<b>Whole Blood</b>		
Signs and Symptoms of Illness <b>Fever, asthenia, cephalgia, myalgia, exanthema, epistaxis, hematemesis, melena hematuria, gingival hem., leukopenia, thrombocytopenia</b>	Arthropod	
Time Held Alive before Inoculation		
Collection Method <b>Syringe</b>	Collection Date <b>6/15/1958</b>	
Place Collected (Minimum of City, State, Country) <b>Junin Hospital, Junin, Prov. Buenos Aires, AR</b>		
Latitude <b>34° S</b>	Longitude <b>60° W</b>	
Macrohabitat <b>Rural community, pampas region, subtropical</b>	Microhabitat <b>Outdoors; cornfield area</b>	Method of Storage until Inoculated <b>Immediately</b>
Footnotes		



### 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; chorioallantoic membrane; serum</b>	Erythrocytes (species used) <b>Several*</b>
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pH Range <b>6.5-8.5</b>	pH Optimum
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Temperature Range	Temperature Optimum <b>4dC and 37dC</b>
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#### Remarks

\* 1 day-old chicken, human, dog, frog, mice, rats, guinea pig, pigeon, goose Inact. after 192 hrs. at 4/C; 72 hrs. at 25/C, 26 hrs. at 37/C, and by UVL 30 sec. at 67 cm. Virus growth not inhibited by 5-IUDR or by actinomycin D(12).

Serologic Methods Recommended  
**CF and NT**

#### Footnotes

\* 1 day-old chicken, human, dog, frog, mice, rats, guinea pig, pigeon, goose Inact. after 192 hrs. at 4/C; 72 hrs. at 25/C, 26 hrs. at 37/C, and by UVL 30 sec. at 67 cm. Virus growth not inhibited by 5-IUDR or by actinomycin D(12).

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

For a list of viruses with which Junin has been compared without detecting any antigenic relationship, see Reference [2] .

Junin has been shown to be a member of the Tacaribe complex and is now placed in the Arenavirus genus together with the morphologically identical Machupo, Amapari, Pichinde, Parana, Tamiami, Latino, and LCM viruses [15] .

Portillo virus synonymous with Junin virus [17] .

**Section VI - Biologic Characteristics**

Virus Source (all VERTEBRATE isolates)  
 Blood (M)(LV), CNS (LV), lung (LV), liver (LV), spleen (LV),  
 kidney (LV), urine (M)(LV), lymph node (LV)

Lab Methods of Virus Recovery (ALL ISOLATIONS)  
 Guinea pigs and 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)	
HeLa (CL)	GP 2	5-15	CPE	5-7** (8)				
Vero (CL)			CPE			Plaques (13)		
Vero (CL)	XJ, P-39				9	1 mm	7.0** (21)	
LLC-MK2 (CL)					6	2 mm	7.2 (21)	

\*\* Expressed in dex

Vertebrate (species and organ) and arthropod	No. isolations/No. tested	No. with antibody/No. tested Test used	Country and region
Man (blood)	>60	Paired sera 20-60% CF	Buenos Aires Prov., Argentina
Rodents:			
<i>Mus musculus</i>	10/33 pools	(411 rodents)	Buenos Aires Prov., Argentina (3, 4)
<i>Calomys laucha</i>	1/28 pools	(229 rodents)	
<i>Akodon arenicola</i>	1/13 pools	(78 rodents)	
<i>Oryzomys flavescens</i>	0/14 pools	(65 rodents)	
<i>Rattus</i> sp.	0/6 pools	(23 rodents)	
<i>Calomys laucha</i>	4/36		Argentina (10)
Mites:			
<i>Echinolaelaps echidninus</i> Berlese (inoculated in guinea pigs)	+ 40		Buenos Aires Prov., Argentina (5)
<i>Eubrachylaelaps rotundus</i>	Pos.		Buenos Aires Prov., Argentina (16)

Other isolations cited in ref. 16: *Calomys laucha* 46; *Akodon azarae*, *Akodon obscurus*, *Calomys musculinus*, *Oryzomys flavescens*. Also from *Cavia pamparum* (wild cavy) and *Lepus europaeus* (hare).

Experimental host and age	Passage history and strain	Inoculation Route-Dose	Evidence of infection	AST (days)	Titer log <sub>10</sub> /ml
Mice (nb)	GP2 M1	ic 0.01	Paralysis, death	9-12	5.25
Mice (nb)		ip 0.01	Paralysis, death	9-12	
Mice (nb)		sc			
Mice (wn)		ic	Irregular deaths (16)		
Mice (wn)		ip	None		
guinea pig (150-1000 gm)		ic 0.2	Death with hemorrhages	10-15	6.0
		ip 0.2			
		sc 0.2			
		in 0.2			
hamsters (nb)		ip	Death (14)	12-13	
man (volunteer)			Susceptible (6)		
rats (nb)		ic	Paralysis	10-12	
Saguinus geoffroy (marmoset)			Death (16)		
chick (nh)			Death		
chick embryos(7 day)		CAM 0.2	Pocks (7)	5-7	4.0
Callitrix jacchus (marmoset, ad)		im3 dex LD50	Viremia, neurol symp., hemorrhage, death (20)		

**Section IX - Experimental Arthropod Infection and Transmission**

Arthropod species & virus source(a)	Method of Infection log10/ml (b)		Incubation period (c)		Transmission by bite (d)		Assay of arthropod, log10/ml (e)		
	Feeding	Injected	Days	°C	Host	Ratio	Whole	Organ	System

Mesostigmata mites able to transmit Junin virus infection experimentally (cited in Reference 16).

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**Section X - Histopathology**

Character of lesions (specify host)

**Edema, degenerative changes, petechial hemorrhages, round cell infiltration and cytoplasmic inclusions. Thymectomized mice inoc. ic showed no histopathological changes (18).**

Inclusion Bodies

Intranuclear

**Man, Lower Vertebrates**

Organs/Tissues Affected

**Brain (M), lungs (M), liver (M), spleen (M), kidney (M), blood vessels (M), marrow (M), secretory glands (M)**

Category of tropism

**Pantropic with hemorrhages**

**Section XI - Human Disease**

In Nature  
**Significant**

Residual

Death  
**Reported**

Subclinical  
**Reported**

Overt Disease  
**Reported**

Clinical Manifestations

**Fever (S), headache (S), prostration (R), conjunctival inflammation (S), stiff neck (S), myalgia (S), arthralgia (S), leukopenia (S), lymphadenopathy (S), and vomiting (S)**

Number of Cases  
**>300**

Category (i.e. febrile illness, etc.)  
**Hemorrhagic fever**

**Section XII - Geographic Distribution**

Known (Virus detected)  
**Argentina**

Suspected (Antibody only detected)

1. Parodi, A.S., et al. 1958. *Dia Medico* 30:2300.
2. Mettler, N., et al. 1963. *Am. J. Trop. Med. Hyg.* 12:647-652.
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11. De Guerrero, L.B., et al. 1968. *Rev. Soc. Argent. Biol.* 44:6-13.
12. Coto, C.E. and De Vombergar, M.D. 1969. *Arch. ges. Virusforsch.* 27:307-316.
13. Rhim, J.S., et al. 1967. *Arch. ges. Virusforsch.* 21:243-252.
14. Bruno-Lobo, G.G., et al. 1968. *Anais Microbiol.* 15:11-33.
15. Murphy, F.A., et al. 1970. *J. Virol.* 6:507-518.
16. Mettler, N.E. 1969. PAHO, Sci. Publication No. 183, 55 pp.
17. Mettler, N. and Casals, J. 1973. *Acta Virol.* 17:472-478.
18. Besuschio, S.C., et al. 1973. *Arch. ges. Virusforsch.* 40:21-28.
19. Weissenbacher, M.C., et al. 1978. *J. Inf. Dis.* 137:309-313.
20. Weissenbacher, M.C., et al. 1979. *Intervirolology.* 11:363-365.
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**Remarks**