

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

SECTION I - Full Virus Name and Prototype Number

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

Section II - Original Source

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

Morphogenesis

Site of Constituent Formation in Cell	Site of Virion Assembly	Site of Virion Accumulation
Inclusion Bodies	Other	

Hemagglutination

Hemagglutination No	Antigen Source SMB; chorioallantoic membrane; serum	Erythrocytes (species used) Several*
pH Range 6.5-8.5	pH Optimum	
Temperature Range	Temperature Optimum 4dC and 37dC	

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							Growth Without CPE +/- (g)
		CPE			PLAQUES				
		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 ₁₀ /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)

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15. Murphy, F.A., et al. 1970. *J. Virol.* 6:507-518.
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17. Mettler, N. and Casals, J. 1973. *Acta Virol.* 17:472-478.
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21. Stim, T.B. 1969. *J. Gen. Virol.* 5:329-338.

Remarks