

Virus Name: Utinga

Abbreviation: UTIV

Status: Possible Arbovirus

SALS Level: 3

Antigenic Group: Simbu

Taxonomic status: *Bunyavirus*

Other Information: None.

Select Agent:

SALS Basis: IE

HEPA Filtration:

Section I - Full Virus Name and Prototype Number

Full Virus Name:

Utinga

Prototype Number:

BeAn 84785

Information from: F. Pinheiro and Amelia P.A.T. Rosa

Date:

5/7/1984

Address: Instituto Evandro Chagas, FSESP, Ministry of Health, CP 621, 66.000 Belem, Para, Brazil

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Revised

Section II - Original Source

Isolated by: Belem Virus Laboratory **at:** Instituto Evandro Chagas, Belem

Genus and species: *Bradyptes tridactylus* (three-toed sloth) **Sentinel** X

Age/Stage: Adult **Sex:** M

Isolated From	Isolation detail
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Signs and symptoms of illness:

Arthropod engorged depleted gravid

Time held alive before inoculation:

Collection date: 4/22/1965 **Method:** By hand

Place collected: Utinga Forest, Belem, Para, Brazil

Latitude: 1° 28' " S

Longitude: 48° 27' " W

Macrohabitat: Watershed forest

Microhabitat: Ground level

Method of storage until inoculated: At -60dC

Footnotes:

Section III - Method of Isolation and Validity

Inoculation Date: 4/23/1965

Animal: nb mice

Embryonated egg:

Tissue Culture:

(Details in Section VI - Biologic Char.)

Route inoculated: Intracerebral

Reisolation: Not tried

Other reasons: Virus also isolated from the viscera of the *Bradyptes* that yielded virus from blood

Homologous antibody formation by source animal (See Section II): Not tested

Test used: HI

CF

NT

Other:

Footnotes:

Section IV - Virus Properties

Physicochemical:

RNA: DNA: Single Strand: Double Strand:
Pieces: Infectivity: Sedimentation coefficient(s): /strong>
Percentage wt. of virion protein , lipid carbohydrate
Virion polypeptides:
Number: Details:
Non-virion polypeptides:
Number: Details:
Virion density: Sedimentation coefficient:
Nucleocapsid density Sedimentation coefficient:

Stability of infectivity (effects) pH

Lipid solvent:
(ether) After treatment titer Control titer
(chloroform) After treatment titer Control titer
Detergent:
(deoxycholate) 1:1000 After treatment titer 1.2 dex Control titer 6.3 dex
Other (formalin, radiation):

Virion morphology:

Shape Dimensions
Mean (nm) range (nm) how measured
Surface projections, envelope
Nucleocapsid dimensions, symmetry

Morphogenesis:

Site of constituent formation in cell
Site of virion assembly
Inclusion bodies
Other

Hemagglutination:

Hemagglutination Yes Antigen source SMB ext. by sucrose-acetone, + sonication
Erythrocytes Goose pH range 5.8-6.4 pH optimum 6.4
Temperature optimum 37dC range RT and 37dC
Remarks
Serologic methods recommended HI, CF, and NT
Footnotes:

Section V - Antigenic Relationship And Lack of Relationship To Other Viruses

Utinga (BeAn 84785) virus is a member of the Simbu group [1] . In the CF test, Utinga antigen reacted with a Simbu group hyperimmune ascitic fluid at a titer of 8/>8 (antibody/antigen) [2] . It was also shown by CF that Utinga and Oropouche (BeAn 19991) viruses are antigenically related, but distinct from each other [2] , as shown below:

Sera	VIRUSES	
	Oropouche	Utinga
Oropouche	64/> 256 *	0
Utinga	16/>256	64/>256

* Antibody titer/antigen titer; 0 = <4/<4

Subsequently, further confirmation was obtained [3] . Furthermore, Utinga virus has been shown to be antigenically distinct from other members of the Simbu group by serum dilution plaque-reduction neutralization tests; and it was placed in the Oropouche complex, one of several complexes comprising the Simbu serogroup [4] .

Section VI - Biologic Characteristics

Virus source (all VERTEBRATE isolates):

Lab Methods of Virus Recovery (ALL ISOLATIONS): Newborn mice

Susceptibility of Cell Culture Systems:

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)	SM 12	2	4+	7.5**	8	<1 mm	8.1**	

** Expressed in dex

Section VII - Natural Host Range

Vertebrate (species and organ) and arthropod	No. isolations/No. tested	No. with antibody/No. tested Test used	Country and region
Bradypus tridactylus (blood, viscera)	1		Utinga forest, Para, Brazil
Bradypus tridactylus	1		Mojui dos Campos, Santarem, Para, Brazil
Man		16/6,909 HI	Amazon region, Brazil
Marsupials		1/8 HI	
Rodents		1/1,692 HI	
Primates		5/461 HI	
Carnivores		0/21 HI	
Ungulates		0/102 HI	
Edentates (sloths)		13/1 HI	
Edentates (sloths)		12/51 HI	Panama (5)
Edentates (others)		0/37 HI	Amazon region, Brazil
Reptiles		0/464 HI	
Bats		1/947 HI	
Wild birds		43/12,351 HI	
Domestic birds		0/239 HI	
Domestic pigs		24/974 HI	
Dogs		0/110 HI	
Cats		0/3 HI	
Sentinel monkeys		1/22 HI	
Sentinel chickens		0/95 HI	
Man		4/1,475 HI	
Sloths	0/54	6/54 HI	Jari, Para, Brazil; 1980
Armadillos and anteaters	0/24	0/24 HI	

Section VIII - Susceptibility To Experimental Infection (Record Viremia)

Experimental host and age	Passage history and strain	Inoculation Route-Dose	Evidence of infection	AST (days)	Titer log10/ml
Mice (nb)	SM 2	ic 0.02	Illness, death	5.5	
Mice (nb)		ip 0.02	None		
Mice (nb)		sc			
Mice (wn)		ic 0.03	Irregular deaths		
Mice (wn)		ip 0.03	Irregular deaths		
Mice (nb)	SM 24	ic 0.02	Death	4.6	8.0(brain)
Mice (nb)	SM 15	ic 0.02	Viremia, death (5)		5.4(serum)
Mice (nb)		ic 0.02	Death		8.0(brain)

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

Section X - Histopathology

Character of lesions:

Inclusion bodies:

Cytoplasmic:(M) (LV) **Intranuclear:** (M) (LV)

Organs-tissues affected:

Category of tropism:

Section XI - Human Disease

Human disease: **In nature:** (S) (R)

Death: (S) (R)

Residua: (S) (R)

Laboratory infections: **Subclinical:** (S) (R)

Overt Disease: (S) (R)

Clinical manifestations:

Category: **No. of cases:**

Section XII - Geographic Distribution

Known (virus):

Brazil

Suspected (antibody):

Panama (5)

Section XIII - References

1. Shope, R.E. and Andrade, A.P.A. In: Woodall, J.P. 1967. Atas do Simposio sobre a Biota Amazonica 6:31-63.
2. Andrade, A.P.A. and Shope, R.E. Unpublished observations.
3. Zachary, I.G. M.D. Thesis, Yale University School of Medicine, 1967.
4. Kinney, R.M. and Calisher, C.H. 1981. Am. J. Trop. Med. Hyg. 30:1307-1318.
5. Belem Virus Laboratory, Belem, Brazil. 1966. Unpublished data.

Section XIV - Remarks
