Virus Name: Vesicular Stomatitis, Alagoas serotype	Abbreviation: VSAV

Status
Possible Arbovirus

Select Agent
No

SALS Level
3

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

Other Information
USDA Permit Required, DOC Permit Required, USDA Restricted, USDA High Consequence Agent

Antigenic Group
Vesicular Stomatitis

SECTION I - Full Virus Name and Prototype Number

Prototype Strain Number / Designation
Brazil 1964

Accession Number

Original Date Submitted
7/11/1984

Family
Vesiculovirus

Genus

Information From
Robert B. Tesh

Address
Yale Arbovirus Research Unit

Information Footnote
Revised

Section II - Original Source

Isolated By (name)
Claudio de Moraes Andrade

Isolated at Institute
Recife, Brazil (1)

Host Genus
Mule

Species

Host Age/Stage
unknown

Sex
Not Answered

Isolated From	Isolation Details
Organs/Tissues	**tongue epithelium (scraping)**

Signs and Symptoms of Illness
vesicular lesions of tongue and feet

Arthropod

Time Held Alive before Inoculation

Collection Method

Collection Date
7/1/1964

Place Collected (Minimum of City, State, Country)
Alagoas

Latitude
9° 0' S

Longitude
36° 0' W

Macrohabitat
moist tropical lowland

Microhabitat
sugar plantation

Method of Storage until Inoculated
glycerine at -20dC

Footnotes

Section III - Method of Isolation

Inoculation Date
7/27/1964

Animal (Details will be in Section 6)
nb mice

Route Inoculated
intraperitoneal

Reisolation

Other Reasons
unknown

Homologous Antibody Formation by Source Animal
Not tested

Test(s) Used

Footnotes

Section IV - Virus Properties

Physicochemical
RNA, Single Strand

Pieces (number of genome segments)	Infectivity	Sedimentation Coefficients(s)
1	**no**	**38-45 S**(S)
Percentage wt, of Virion Protein	Lipid	Carbohydrate
60-70%	**20-25%**	**3-15%; RNA = 0.7-5%**
Virion Polypeptides: Number	Details	
5	**not published, probably similar to Vesicular Stomatitis Indiana**	
Non-virion Polypeptides: Number	Details	
0		
Virion Density	Sedimentation Coefficients(s)	
1.18-1.20 in sucrose	**625 S**(S)	
Nucleocapsid Density	Sedimentation Coefficients(s)	
1.32 in CsCl	**140 S**(S)	

Stability of Infectivity (effects)

pH (infective range)

Lipid Solvent (ether - % used to test)	After Treatment Titer	Control Titer
Lipid Solvent (chloroform)	After Treatment Titer	Control Titer
sensitive (1)		
Lipid Solvent (deoxycholate)	After Treatment Titer	Control Titer

Other (formalin, radiation)

Virion Morphology

Shape	Dimensions	
bullet-shaped (2)	**180 x 75 (2)**	
Mean	Range	
nm	nm	
Measurement Method	Surface Projections/Envelope	Nucleocapsid Dimensions, Symmetry
	surface projections, 6-10 nm; bilayer lipid	

membrane

Morphogenesis

Site of Constituent Formation in Cell	Site of Virion Assembly	Site of Virion Accumulation
cytoplasm	**buds from plasma membrane**	**extracellular and in cytoplasmic vesicles**

Inclusion Bodies
not usually

Other

Hemagglutination

Hemaggiutination	Antigen Source	Erythrocytes (species used)
Not tried		

pH Range

pH Optimum

Temperature Range

Temperature Optimum

Remarks

Serologic Methods Recommended
CF, NT

Footnotes

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

CF Tests (3)

Antigen	Antiserum					
	VS-Indiana	Cocal	VS-Alagoas	VS-New Jersey	Piry	Chandipura
VS-Indiana	320 *	20	20	0	0	0
Cocal	20	160	40	0	0	0
VS-Alagoas	20	40	320	0	0	0
VS-New Jersey	0	0	0	160	0	0
Piry	0	0	0	0	80	0
Chandipura	0	0	0	0	0	80

Antisera = single injection guinea pig sera

* Reciprocal of highest positive serum dilution; 0 = <5

Mouse Protection Neutralization Test (3)

Antiserum	Virus					
	VS-Indiana	Cocal	VS-Alagoas	VS-New Jersey	Piry	Chandipura
VS-Indiana	1300 **	0	0	0	0	0
Cocal	0	730	0	0	0	0
VS-Alagoas	0	0	1100	0	0	0
New Jersey	0	0	0	1250	0	0
Piry	0	0	0	0	350	0
Chandipura	0	0	0	0	0	420

Antisera = single injection guinea pig sera

** Reciprocal of highest serum dilution protecting 50% of newborn mice inoculated intracerebrally.

Also see Isfahan virus registration card for other serologic data.

Section VI - Biologic Characteristics

Virus Source (all VERTEBRATE isolates)
Blood (LV)

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)
LLC-MK2 (CL)	SM 15					Plaques		
BHK-21 (CL)	MB 1 bovine tongue 1				2-3	1-2mm	7.3 [a] (5)	
PS (CL)						Plaques	6.8 (5)	
Aedes albopictus (CL)	SM 15							+ (4)
Aedes malayensis (CL)								+ (4)
Aedes pseudoscutellaris (CL)								- (4)
Culex pipiens quinquefasciatus (CL)								- (4)

[a] 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
mule	2/2		Alagoas, Brazil (1)
man		440/1,748 CF	Various states in Brazil (1)
horses		34/112 CF	
monkeys		15/45 CF	Bahia, Brazil (1)
bats		5/65 CF	

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)	MB 1 Bovine 1	ic	death		7.2
mice (nb)		ip	death		5.1
mice (nb)		sc			
mice (wn)		ic			
mice (wn)		ip			
cow (ad)		intralingual	tongue vesicules, fever and subsequent antibodies; no detectable viremia at 24 48 hr (5)		3.8 *

* Tongue epithelium

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
Drosophila melangaster inoculated with VSA are infected and subsequently develp paralysis after exposure to CO2 (6).									

Section X - Histopathology

Character of lesions (specify host)
vesicles of tongue epithelium and feet in LV. (cattle - experimental, mules - natural infections) (1, 5). Foot pad vesicles in guinea pigs at inoculation site (1). Encephalitis in mice inoculated intracerebrally (1).

Inclusion Bodies — Intranuclear

Organs/Tissues Affected

Category of tropism
Epithelialtropic (neurotropic experimentally)

Section XI - Human Disease

In Nature	Residual	Death
Reported		

Subclinical — Overt Disease

Clinical Manifestations
fever, headache, malaise (R) (1, 5)

Number of Cases	Category (i.e. febrile illness, etc.)
few (1)	**Febrile disease**

Section XII - Geographic Distribution

Known (Virus detected)

Suspected (Antibody only detected)

Section XIII - References

1. Andrade, C.M. Thesis, Instituto de Microbiologia, Universidade Federal do Rio de Janeiro, Brazil, 1974.
2. Knudson, D.L. 1973. J. Gen. Virol 20:105-130.
3. Nozawa, C.M. and Andrade C.M. 1978. Anais Microbiol. (Rio) 23:11-17.
4. Barry, C. 1978. Anais Microbiol. 23:51-57.
5. Federer, K.F., et al. 1967. Res. Vet. Sci. 8:103-112.
6. Bussereau, F. 1973. Ann. Microbiol. 124A:535-554.

Remarks

Since VS-Alagoas was originally isolated in a foot-and-mouth disease diagnostic laboratory, it is not available for study in the United States.