

<b>Virus Name: Meaban</b>		<b>Abbreviation: MEAV</b>
Status <b>Possible Arbovirus</b>	Select Agent <b>No</b>	SALS Level
SALS Basis		
Other Information		
Antigenic Group <b>B</b>		

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

Prototype Strain Number / Designation <b>Brest/Ar/T-707</b>	Accession Number	Original Date Submitted 12/25/1984
Family <b>Flaviviridae</b>	Genus <b>Flavivirus</b>	
Information From <b>C. Chastel (Brest) and A.J. Main (YARU)</b>	Address <b>Virus Laboratory, Faculty of Medicine, Brest, France; YARU, P.O. Box 3333, New Haven, CT</b>	
Information Footnote		

**Section II - Original Source**

Isolated By (name) <b>C. Chastel</b>	Isolated at Institute <b>Brest, France</b>	
Host Genus <b>Ornithodoros (Alectorobius) maritimus, pool of 12</b>	Species	Host Age/Stage <b>12 Nymphs</b>
Sex <b>Not Answered</b>		
<u>Isolated From</u>	<u>Isolation Details</u>	
Signs and Symptoms of Illness	Arthropod <b>Depleted</b>	
Time Held Alive before Inoculation		
Collection Method <b>By hand</b>	Collection Date <b>7/3/1981</b>	
Place Collected (Minimum of City, State, Country) <b>Gulf of Morbihan, Morbihan, France</b>		
Latitude <b>47° 31' N</b>	Longitude <b>2° 56' W</b>	
Macrohabitat <b>Herring gull (Larus argentatus) colony</b>	Microhabitat <b>Herring gull nests</b>	Method of Storage until Inoculated <b>-70dC</b>
Footnotes		

**Section III - Method of Isolation**

Inoculation Date  
**12/11/1981**

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

Route Inoculated <b>Intracerebral</b>	Reisolation <b>Yes</b>
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Other Reasons

Homologous Antibody Formation by Source Animal

Test(s) Used

Footnotes

**Section IV - Virus Properties**

Physicochemical

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)

**ph: 3.0; after treatment: 2.0 dex; Control titer: 7.3 dex**

Lipid Solvent (ether - % used to test)	After Treatment Titer <b>1.5 dex</b>	Control Titer <b>7.3 dex</b>
Lipid Solvent (chloroform)	After Treatment Titer	Control Titer
Lipid Solvent (deoxycholate)	After Treatment Titer	Control Titer
Other (formalin, radiation)		

**Virion Morphology**

Shape	Dimensions	
Mean <b>45nmnm</b>	Range <b>40-45nmnm</b>	
Measurement Method <b>Electron microscopy</b>	Surface Projections/Envelope <b>Envelope present</b>	Nucleocapsid Dimensions, Symmetry

**Morphogenesis**Site of Constituent Formation in Cell  
**Cytoplasm**Site of Virion Assembly  
**Intracytoplasmic vacuoles**Site of Virion Accumulation  
**Extracellular spaces**Inclusion Bodies  
**Not seen**

Other

**Hemagglutination**Hemagglutination  
**Yes**Antigen Source  
**SMB ext. by sucrose-acetone**Erythrocytes (species used)  
**Goose**pH Range  
**5.8-6.8**pH Optimum  
**6.4**Temperature Range  
**4dC, 22dC, 37dC**Temperature Optimum  
**4dC**

Remarks

Serologic Methods Recommended  
**CF, HI, NT**

Footnotes

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

In CF and HI tests done at YARU with 65 flaviviruses, the closest relationships were seen with the following:

Antibodies or Antigens	Brest/Ar/T-707			
	Antigen		Antibody	
	CF Ht/Ho	HI Ht/Ho	CF Ht/Ho	HI Ht/Ho
Murray Valley encephalitis	16/64	10/160	256/4096	640/81920
Tyuleniy (FinV-724)	16/128	40/1280	256/4096	5120/81920
Sepik	128/>1024	160/>10240	256/4096	320/81920
Gadget's Gully	<8/64	<10/40	256/4096	160/81920
Saumarez Reef	128/256	80/160	128/4096	160/81920
Usutu	128/256	160/1280	128/4096	640/81920
Tyuliney (TAR)	64/256	160/>10240	128/4096	1280/81920
Banzi	<8/32	<10/20	128/4096	640/81920
Ilheus	64/512	10/5120	128/4096	2560/81920
Wesselsbron	<8/64	<10/40	128/4096	1280/81920

Apoi	<8/128	10/160	128/4096	640/81920
Edge Hill	<8/128	10/80	128/4096	640/81920
Tick-borne encephalitis (RSSE)	64/128	20/1280	64/4096	80/81920
Tyulenyi (LEIV 6c)	512/>1024	320/2560	64/4096	160/81920
Entebbe Bat	<8/16	<10/40	64/4096	40960/81920
Israel Turkey Encephalitis	64/256	320/640	64/4096	640/81920
Kadam	16/64	40/640	64/4096	1280/81920
Royal Farm	64/256	10/5120	64/4096	80/81920
Ntaya	<8/32	<10/160	64/4096	10240/81920
Tembusu	<8/32	<10/160	64/4096	640/81920
West Nile	64/512	10/>10240	64/4096	640/81920
Langat	16/128	10/640	64/4096	320/81920
Dakar bat	<8/64	<10/10	64/4096	80/81920
Spondweni	<8/64	<10/40	64/4096	40/81920
Saboya	32/512	160/10240	64/4096	10240/81920
Dengue 3	16/512	10/80	64/4096	80/81920
Bussaquara	<8/256	<10/80	64/4096	640/81920

NT tests at Brest demonstrated that Brest/Ar/T-707 is distinct from West Nile, Tyulenyi and Saumarez Reef [1]. CF, HI, and NT tests at CDC, Fort Collins demonstrated that Brest/Ar/T-707 is distinct from Langat, Negishi, Tyulenyi, Saumarez Reef, Carey Island and Gadgets Gully [2].

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 +/- (g)
		Day (c)	Extent (d)	Titer TCD50/ml (e)	Day (c)	Size (f)	Titer PFU/ml (e)	
MRC-5 (CL)	Brest/		None					-
Vero (CL)	ArT-707,		None					-
BHK-21 (CL)	SM 3		None					-
Monkey kidney (PC)			None					-
LLC-MK2 (CL)	P3 SM 1				9-10	Plaques	7.8* (2)	
Vero (CL)						No plaques (2)		
PS (CL)						No plaques (2)		
CER (CL)						No plaques (2)		
SW 13 (CL)						No plaques (2)		
Duck embryo (PC)						No plaques (2)		

\* Expressed in dex

Vertebrate (species and organ) and arthropod	No. isolations/No. tested	No. with antibody/No. tested Test used	Country and region
Ornithodoros (Al.) maritimus	5/147		Meaban Island, South Brittany, France; 1981
Ornithodoros (Al.) maritimus	2/59		Penfred Island, Glenan Archipelago, France; 1982
Man		0/562 HI	Brittany, France
Seabirds:			
Larus fuscus fuscus		1/21 HI	
Larus argentatus		16/163 HI	
Larus marinus		0/3 HI	
Larus ridibundus		0/14 HI	
Rissa tridactyla		0/6 HI	
Phalacrocorax aristotelis		0/5 HI	
Phalacrocorax carbo		0/3 HI	
Nonmarine birds (mainly passeriformes)		0/74 HI	

**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 log <sub>10</sub> /ml
Mice (nb)	Brest/Ar/T707, SM 3	ic	Paralysis, death	6.6	>3.5
Mice (nb)		ip	Paralysis, death	8.3	>3.5
Mice (nb)		sc			
Mice (wn)		ic	Paralysis, death	10.0	>3.5
Mice (wn)		ip	None		

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

Arthropod species & virus source(a)	Method of Infection log <sub>10</sub> /ml (b)		Incubation period (c)		Transmission by bite (d)		Assay of arthropod, log <sub>10</sub> /ml (e)		
	Feeding	Injected	Days	°C	Host	Ratio	Whole	Organ	System

**Section X - Histopathology**

Character of lesions (specify host)  
**Acute meningo-encephalitis in inoculated sm; no lesions in liver, spleen, heart and kidney**

Inclusion Bodies Intranuclear

Organs/Tissues Affected  
**Brain (LV)**

Category of tropism  
**Neurotropic**

**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) <b>South Brittany, France</b>
Suspected (Antibody only detected)

**Section XIII - References**

1. Chastel, C., et al. 1985. Arch. Virol. 83:129-140. 2. Karabatsos, N. Personal communication. 1984.
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**Remarks**

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