

Serotype: O		Report date: 13/02/2007					
WRL Ref No: CAR/2/2005							
Sender Ref: A/NY/01-05							
Date collected: 19/05/2005							
Date received by WRLFMD: 27/10/2005		Topotype: West Africa (WA)					
Date received for sequencing: 01/11/2005		Genotype/strain: none designated					
Species: Cattle		Sequence filename: CAR05-02.SEQ					
Material used: BTy1		Date sequence last updated: 06/07/2006					
Region sequenced: VP1		Total no. of comparisons: 1490					
RT-PCR primers: O-1C272F/EUR-2B52R; O-1C244F/EUR-2B52R		Min. no. of nt for comparison: 300					
No. of Nt determined: 639		Total turn-around time: 474 days					
No. of ambiguities: 0		Sequencing time: 469 days					
Gene length: 639							
Comments:							
<b>Ten Most Closely Related Viruses*</b>							
Pos.	Virus name	Filename	No. nt compared	No. nt matched	No. of ambiguities	% Identity	% Difference
1	O/TOG/1/2004	TOG04-01	639	568	0	88.89	11.11
2	O/GHA/5/93	GHA93-05	639	567	0	88.73	11.27
3	O/GHA/6/93 (AF300807)	GHA93A06	495	438	0	88.48	11.52
4	O/GHA/7/93 (AF300808)	GHA93A07	495	438	0	88.48	11.52
5	O/SUD/3/83 (AY344606)	SUD83A03	495	438	0	88.48	11.52
6	O/MAI/1/2005	MAI05-01	639	565	0	88.42	11.58
7	O/MAI/2/2005	MAI05-02	639	565	0	88.42	11.58
8	O/TOG/1/2005	TOG05-01	639	565	0	88.42	11.58
9	O/TOG/3/2005	TOG05-03	639	565	0	88.42	11.58
10	O/TOG/4/2005	TOG05-04	639	565	0	88.42	11.58
* not including Cameroon isolates in the same batch.							
<b>Relationships to Reference Virus Strains</b>							
Pos.	Virus name	Filename	No. nt compared	No. nt matched	No. of ambiguities	% Identity	% Difference
1	O/TAW/2/99	TAW99-02	639	542	0	84.82	15.18
2	O/IND/R2/75* [AF204276]	IND75--A	639	541	0	84.66	15.34
3	O/IND/53/79 [AF292107]	IND79A53	639	538	0	84.19	15.81
4	O1/Manisa/TUR/69 (AJ251477)	TUR69--E	639	535	0	83.72	16.28
5	O/MOR/1/91	MOR91-01	639	534	0	83.57	16.43
6	O/ISR/2/88 (DQ164899)	ISR88-02	639	533	0	83.41	16.59
7	O/TAI/189/87* [TRRL]	TAI87-AC	639	531	0	83.1	16.9
8	O/PHI/5/95 (DQ164946)	PHI95-05	639	510	0	79.81	20.19
9	O/HKN/6/83	HKN83-06	637	506	2	79.43	20.57
10	O1/BFS 1860/UK/67	UKG67--A	639	506	0	79.19	20.81
nt, nucleotides							
*, not a WRLFMD reference number							

Serotype: O  
WRL Ref No: CAR/15/2005  
Sender Ref: C/BY/04-01  
Date collected: 22/05/2004  
Date received by WRLFMD: 27/10/2005  
Date received for sequencing: 09/11/2005  
Species: Cattle  
Material used: BTy1  
Region sequenced: VP1  
RT-PCR primers: O-1C272F/EUR-2B52R;  
O-1C244F/EUR-2B52R  
No. of Nt determined: 639  
No. of ambiguities: 0  
Gene length: 639

Report date: 13/02/2007  
Topotype: West Africa (WA)  
Genotype/strain: none designated  
Sequence filename: CAR05-15.SEQ  
Date sequence last updated: 06/07/2006  
Total no. of comparisons: 1490  
Min. no. of nt for comparison: 300  
Total turn-around time: 474 days  
Sequencing time: 461 days

Comments:

**Ten Most Closely Related Viruses\***

Pos.	Virus name	Filename	No. nt compared	No. nt matched	No. of ambiguities	% Identity	% Difference
1	O/TOG/1/2004	TOG04-01	639	561	0	87.79	12.21
2	O/GHA/5/93	GHA93-05	639	560	0	87.64	12.36
3	O/MAI/1/2005	MAI05-01	639	560	0	87.64	12.36
4	O/MAI/2/2005	MAI05-02	639	560	0	87.64	12.36
5	O/MAI/3/2005	MAI05-03	639	559	0	87.48	12.52
6	O/CAR/16/2000	CAR00-16	637	557	2	87.44	12.56
7	O/CAR/17/2000	CAR00-17	639	558	0	87.32	12.68
8	O/TOG/1/2005	TOG05-01	639	558	0	87.32	12.68
9	O/TOG/3/2005	TOG05-03	639	558	0	87.32	12.68
10	O/TOG/4/2005	TOG05-04	639	558	0	87.32	12.68

\* not including Cameroon isolates in the same batch.

**Relationships to Reference Virus Strains**

Pos.	Virus name	Filename	No. nt compared	No. nt matched	No. of ambiguities	% Identity	% Difference
1	O/TAW/2/99	TAW99-02	639	536	0	83.88	16.12
2	O/IND/R2/75* [AF204276]	IND75--A	639	535	0	83.72	16.28
3	O/IND/53/79 [AF292107]	IND79A53	639	534	0	83.57	16.43
4	O/MOR/1/91	MOR91-01	639	529	0	82.79	17.21
5	O1/Manisa/TUR/69 (AJ251477)	TUR69--E	639	529	0	82.79	17.21
6	O/ISR/2/88 (DQ164899)	ISR88-02	639	528	0	82.63	17.37
7	O/TAI/189/87* [TRRL]	TAI87-AC	639	527	0	82.47	17.53
8	O/PHI/5/95 (DQ164946)	PHI95-05	639	507	0	79.34	20.66
9	O1/BFS 1860/UK/67	UKG67--A	639	505	0	79.03	20.97
10	O/HKN/6/83	HKN83-06	637	495	2	77.71	22.29

nt, nucleotides

\*, not a WRLFMD reference number

Serotype: O		Report date: 13/02/2007					
WRL Ref No: CAR/97/2005							
Sender Ref: C/BR/19-3							
Date collected: 14/06/2005		Topotype: West Africa (WA)					
Date received by WRLFMD: 27/10/2005		Genotype/strain: none designated					
Date received for sequencing: 23/11/2005		Sequence filename: CAR05-97.SEQ					
Species: Cattle		Date sequence last updated: 26/07/2006					
Material used: BTy1		Total no. of comparisons: 1490					
Region sequenced: VP1		Min. no. of nt for comparison: 300					
RT-PCR primers: O-1C272F/EUR-2B52R; O-1C244F/EUR-2B52R		Total turn-around time: 474 days					
No. of Nt determined: 639		Sequencing time: 447 days					
No. of ambiguities: 0							
Gene length: 639							
Comments:							
<b>Ten Most Closely Related Viruses*</b>							
Pos.	Virus name	Filename	No. nt compared	No. nt matched	No. of ambiguities	% Identity	% Difference
1	O/TOG/1/2004	TOG04-01	639	569	0	89.05	10.95
2	O/GHA/5/93	GHA93-05	639	568	0	88.89	11.11
3	O/MAI/1/2005	MAI05-01	639	568	0	88.89	11.11
4	O/MAI/2/2005	MAI05-02	639	568	0	88.89	11.11
5	O/MAI/3/2005	MAI05-03	639	567	0	88.73	11.27
6	O/TOG/1/2005	TOG05-01	639	566	0	88.58	11.42
7	O/TOG/3/2005	TOG05-03	639	566	0	88.58	11.42
8	O/TOG/4/2005	TOG05-04	639	566	0	88.58	11.42
9	O/GHA/6/93 (AF300807)	GHA93A06	495	438	0	88.48	11.52
10	O/GHA/7/93 (AF300808)	GHA93A07	495	438	0	88.48	11.52
* not including Cameroon isolates in the same batch.							
<b>Relationships to Reference Virus Strains</b>							
Pos.	Virus name	Filename	No. nt compared	No. nt matched	No. of ambiguities	% Identity	% Difference
1	O/TAW/2/99	TAW99-02	639	541	0	84.66	15.34
2	O/IND/R2/75* [AF204276]	IND75--A	639	540	0	84.51	15.49
3	O/IND/53/79 [AF292107]	IND79A53	639	537	0	84.04	15.96
4	O/MOR/1/91	MOR91-01	639	533	0	83.41	16.59
5	O/ISR/2/88 (DQ164899)	ISR88-02	639	532	0	83.26	16.74
6	O/TAI/189/87* [TRRL]	TAI87-AC	639	532	0	83.26	16.74
7	O1/Manisa/TUR/69 (AJ251477)	TUR69--E	639	532	0	83.26	16.74
8	O/PHI/5/95 (DQ164946)	PHI95-05	639	511	0	79.97	20.03
9	O1/BFS 1860/UK/67	UKG67--A	639	507	0	79.34	20.66
10	O/HKN/6/83	HKN83-06	637	501	2	78.65	21.35
nt, nucleotides							
*, not a WRLFMD reference number							

## FAO World Reference Laboratory for Foot-and-Mouth Disease

### Report on the Genetic Characterisation of FMD viruses

WRLFMD Batch No.: WRLFMD-2005-00030

Report date: 15/02/2007

Country (code): Cameroon (CAR)

Prepared by: N.J. Knowles

Date received: 27/10/2005

### Summary of Results

Serotype	WRLFMD Ref. No.	Topotype	Strain
A	CAR/36/2005	AFRICA	None designated
A	CAR/115/2005	AFRICA	None designated
A	CAR/116/2005	AFRICA	None designated
O	CAR/2/2005	WEST AFRICA	None designated
O	CAR/3/2005	WEST AFRICA	None designated
O	CAR/10/2005	WEST AFRICA	None designated
O	CAR/11/2005	WEST AFRICA	None designated
O	CAR/15/2005	WEST AFRICA	None designated
O	CAR/16/2005	WEST AFRICA	None designated
O	CAR/17/2005	WEST AFRICA	None designated
O	CAR/18/2005	WEST AFRICA	None designated
O	CAR/27/2005	WEST AFRICA	None designated
O	CAR/28/2005	WEST AFRICA	None designated
O	CAR/52/2005	WEST AFRICA	None designated
O	CAR/54/2005	WEST AFRICA	None designated
O	CAR/71/2005	WEST AFRICA	None designated
O	CAR/76/2005	WEST AFRICA	None designated
O	CAR/77/2005	WEST AFRICA	None designated
O	CAR/82/2005	WEST AFRICA	None designated
O	CAR/84/2005	WEST AFRICA	None designated
O	CAR/86/2005	WEST AFRICA	None designated
O	CAR/87/2005	WEST AFRICA	None designated
O	CAR/88/2005	WEST AFRICA	None designated
O	CAR/91/2005	WEST AFRICA	None designated
O	CAR/93/2005	WEST AFRICA	None designated
O	CAR/97/2005	WEST AFRICA	None designated
O	CAR/103/2005	WEST AFRICA	None designated
SAT 2	CAR/1/2005	None designated	None designated
SAT 2	CAR/4/2005	None designated	None designated
SAT 2	CAR/5/2005	None designated	None designated
SAT 2	CAR/7/2005	None designated	None designated
SAT 2	CAR/8/2005	None designated	None designated
SAT 2	CAR/9/2005	None designated	None designated
SAT 2	CAR/12/2005	None designated	None designated
SAT 2	CAR/20/2005	None designated	None designated
SAT 2	CAR/24/2005	None designated	None designated
SAT 2	CAR/25/2005	None designated	None designated
SAT 2	CAR/30/2005	None designated	None designated
SAT 2	CAR/31/2005	None designated	None designated
SAT 2	CAR/34/2005	None designated	None designated
SAT 2	CAR/38/2005	None designated	None designated
SAT 2	CAR/39/2005	None designated	None designated
SAT 2	CAR/40/2005	None designated	None designated
SAT 2	CAR/45/2005	None designated	None designated
SAT 2	CAR/46/2005	None designated	None designated
SAT 2	CAR/47/2005	None designated	None designated
SAT 2	CAR/48/2005	None designated	None designated

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Serotype	WRLFMD Ref. No.	Topotype	Strain
SAT 2	CAR/49/2005	None designated	None designated
SAT 2	CAR/50/2005	None designated	None designated
SAT 2	CAR/55/2005	None designated	None designated
SAT 2	CAR/56/2005	None designated	None designated
SAT 2	CAR/57/2005	None designated	None designated
SAT 2	CAR/58/2005	None designated	None designated
SAT 2	CAR/60/2005	None designated	None designated
SAT 2	CAR/61/2005	None designated	None designated
SAT 2	CAR/62/2005	None designated	None designated
SAT 2	CAR/64/2005	None designated	None designated
SAT 2	CAR/68/2005	None designated	None designated
SAT 2	CAR/69/2005	None designated	None designated
SAT 2	CAR/72/2005	None designated	None designated
SAT 2	CAR/75/2005	None designated	None designated
SAT 2	CAR/79/2005	None designated	None designated
SAT 2	CAR/80/2005	None designated	None designated
SAT 2	CAR/81/2005	None designated	None designated
SAT 2	CAR/85/2005	None designated	None designated
SAT 2	CAR/89/2005	None designated	None designated
SAT 2	CAR/92/2005	None designated	None designated
SAT 2	CAR/94/2005	None designated	None designated
SAT 2	CAR/95/2005	None designated	None designated
SAT 2	CAR/98/2005	None designated	None designated
SAT 2	CAR/99/2005	None designated	None designated
SAT 2	CAR/104/2005	None designated	None designated
SAT 2	CAR/105/2005	None designated	None designated
SAT 2	CAR/107/2005	None designated	None designated
SAT 2	CAR/108/2005	None designated	None designated
SAT 2	CAR/109/2005	None designated	None designated
SAT 2	CAR/110/2005	None designated	None designated
SAT 2	CAR/117/2005	None designated	None designated
SAT 2	CAR/118/2005	None designated	None designated
SAT 2	CAR/119/2005	None designated	None designated

### Comments:

The program MEGA 3.1 was used to compute and draw the trees (parameters are shown on the trees). For types O and SAT 2 only example reports (n=3 in each case) have been prepared since all isolates are closely related. A table of percentage nucleotide differences is also included for types O and SAT2. Three of the SAT2's are only partial sequences and are not included on the tree; however, they have been included table of differences. They are:

SAT2/CAR/40/2005 (360 nt)

SAT2/CAR/49/2005 (429 nt)

SAT2/CAR/68/2005 (438 nt)

**Percentage nucleotide difference matrix for FMDV O Cameroon 2005**

	2	3	10	11	15	16	17	18	27	28	52	54	65	71	76	77	82	84	86	87	88	91	93	97	103
<b>O/CAR/2/2005</b>	0.00	0.16	0.94	1.10	2.50	2.50	2.50	2.50	1.10	1.10	0.31	1.10	0.47	0.94	1.10	1.10	1.10	1.10	0.16	0.16	0.16	0.78	1.10	0.78	1.25
<b>O/CAR/3/2005</b>	0.16	0.00	0.78	0.94	2.35	2.35	2.35	2.35	0.94	0.94	0.16	0.94	0.31	0.78	0.94	0.94	0.94	0.94	0.00	0.00	0.00	0.63	0.94	0.63	1.10
<b>O/CAR/10/2005</b>	0.94	0.78	0.00	0.16	2.19	2.19	2.19	2.19	0.78	0.78	0.94	0.47	1.10	0.31	0.78	0.78	0.47	0.47	0.78	0.78	0.78	0.47	0.47	0.16	0.94
<b>O/CAR/11/2005</b>	1.10	0.94	0.16	0.00	2.35	2.35	2.35	2.35	0.94	0.94	1.10	0.63	0.94	0.47	0.94	0.94	0.63	0.63	0.94	0.94	0.94	0.63	0.63	0.31	1.10
<b>O/CAR/15/2005</b>	2.50	2.35	2.19	2.35	0.00	0.00	0.00	0.00	2.35	2.35	2.50	2.35	2.66	2.19	2.35	2.35	2.35	2.35	2.35	2.35	2.35	2.03	2.35	2.03	2.50
<b>O/CAR/16/2005</b>	2.50	2.35	2.19	2.35	0.00	0.00	0.00	0.00	2.35	2.35	2.50	2.35	2.66	2.19	2.35	2.35	2.35	2.35	2.35	2.35	2.35	2.03	2.35	2.03	2.50
<b>O/CAR/17/2005</b>	2.50	2.35	2.19	2.35	0.00	0.00	0.00	0.00	2.35	2.35	2.50	2.35	2.66	2.19	2.35	2.35	2.35	2.35	2.35	2.35	2.35	2.03	2.35	2.03	2.50
<b>O/CAR/18/2005</b>	2.50	2.35	2.19	2.35	0.00	0.00	0.00	0.00	2.35	2.35	2.50	2.35	2.66	2.19	2.35	2.35	2.35	2.35	2.35	2.35	2.35	2.03	2.35	2.03	2.50
<b>O/CAR/27/2005</b>	1.10	0.94	0.78	0.94	2.35	2.35	2.35	2.35	0.00	0.94	1.10	0.94	1.25	0.78	0.63	0.63	0.94	0.94	0.94	0.94	0.94	0.63	0.94	0.63	1.10
<b>O/CAR/28/2005</b>	1.10	0.94	0.78	0.94	2.35	2.35	2.35	2.35	0.94	0.00	1.10	0.94	1.25	0.78	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.63	0.94	0.63	1.10
<b>O/CAR/52/2005</b>	0.31	0.16	0.94	1.10	2.50	2.50	2.50	2.50	1.10	1.10	0.00	1.10	0.16	0.94	1.10	1.10	1.10	1.10	0.16	0.16	0.16	0.78	1.10	0.78	1.25
<b>O/CAR/54/2005</b>	1.10	0.94	0.47	0.63	2.35	2.35	2.35	2.35	0.94	0.94	1.10	0.00	1.25	0.47	0.94	0.94	0.00	0.31	0.94	0.94	0.94	0.63	0.00	0.31	1.10
<b>O/CAR/65/2005</b>	0.47	0.31	1.10	0.94	2.66	2.66	2.66	2.66	1.25	1.25	0.16	1.25	0.00	1.10	1.25	1.25	1.25	1.25	0.31	0.31	0.31	0.94	1.25	0.94	1.41
<b>O/CAR/71/2005</b>	0.94	0.78	0.31	0.47	2.19	2.19	2.19	2.19	0.78	0.78	0.94	0.47	1.10	0.00	0.78	0.78	0.47	0.47	0.78	0.78	0.78	0.47	0.47	0.16	0.94
<b>O/CAR/76/2005</b>	1.10	0.94	0.78	0.94	2.35	2.35	2.35	2.35	0.63	0.94	1.10	0.94	1.25	0.78	0.00	0.00	0.94	0.94	0.94	0.94	0.94	0.63	0.94	0.63	1.10
<b>O/CAR/77/2005</b>	1.10	0.94	0.78	0.94	2.35	2.35	2.35	2.35	0.63	0.94	1.10	0.94	1.25	0.78	0.00	0.00	0.94	0.94	0.94	0.94	0.94	0.63	0.94	0.63	1.10
<b>O/CAR/82/2005</b>	1.10	0.94	0.47	0.63	2.35	2.35	2.35	2.35	0.94	0.94	1.10	0.00	1.25	0.47	0.94	0.94	0.00	0.31	0.94	0.94	0.94	0.63	0.00	0.31	1.10
<b>O/CAR/84/2005</b>	1.10	0.94	0.47	0.63	2.35	2.35	2.35	2.35	0.94	0.94	1.10	0.31	1.25	0.47	0.94	0.94	0.31	0.00	0.94	0.94	0.94	0.63	0.31	0.31	1.10
<b>O/CAR/86/2005</b>	0.16	0.00	0.78	0.94	2.35	2.35	2.35	2.35	0.94	0.94	0.16	0.94	0.31	0.78	0.94	0.94	0.94	0.94	0.00	0.00	0.00	0.63	0.94	0.63	1.10
<b>O/CAR/87/2005</b>	0.16	0.00	0.78	0.94	2.35	2.35	2.35	2.35	0.94	0.94	0.16	0.94	0.31	0.78	0.94	0.94	0.94	0.94	0.00	0.00	0.00	0.63	0.94	0.63	1.10
<b>O/CAR/88/2005</b>	0.16	0.00	0.78	0.94	2.35	2.35	2.35	2.35	0.94	0.94	0.16	0.94	0.31	0.78	0.94	0.94	0.94	0.94	0.00	0.00	0.00	0.63	0.94	0.63	1.10
<b>O/CAR/91/2005</b>	0.78	0.63	0.47	0.63	2.03	2.03	2.03	2.03	0.63	0.63	0.78	0.63	0.94	0.47	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.00	0.63	0.31	0.47
<b>O/CAR/93/2005</b>	1.10	0.94	0.47	0.63	2.35	2.35	2.35	2.35	0.94	0.94	1.10	0.00	1.25	0.47	0.94	0.94	0.00	0.31	0.94	0.94	0.94	0.63	0.00	0.31	1.10
<b>O/CAR/97/2005</b>	0.78	0.63	0.16	0.31	2.03	2.03	2.03	2.03	0.63	0.63	0.78	0.31	0.94	0.16	0.63	0.63	0.31	0.31	0.63	0.63	0.63	0.31	0.31	0.00	0.78
<b>O/CAR/103/2005</b>	1.25	1.10	0.94	1.10	2.50	2.50	2.50	2.50	1.10	1.10	1.25	1.10	1.41	0.94	1.10	1.10	1.10	1.10	1.10	1.10	1.10	0.47	1.10	0.78	0.00

N.J. Knowles & J. Wadsworth, 14 February 2007

# Report on FMDV O Cameroon 2005

No. of Taxa : 159

Data File : n:\evd\meg\db\fmv\o\CAR2005B.MEG

Data Title : FMDV O Cameroon 2005

Data Type : Nucleotide (Coding)

Analysis : Phylogeny reconstruction

Tree Inference : =====

Method : Neighbor-Joining

Phylogeny Test and options : Bootstrap (1000 replicates; seed=64238)

Include Sites : =====

Gaps/Missing Data : Pairwise Deletion

Codon Positions : 1st+2nd+3rd+Noncoding

Substitution Model : =====

Model : Nucleotide: Kimura 2-parameter

Substitutions to Include : d: Transitions + Transversions

Pattern among Lineages : Same (Homogeneous)

Rates among sites : Uniform rates

No. of Sites : 642

No Of Bootstrap Reps = 1000

Bootstrap values of 70% or above are shown

██████████, 13 Feb. 2007

