WRLFMD

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FMD Sequencing Report

Lab Reference WRL Batch Number: WRLFMD/2009/00026
Sender Details: [redacted]
Date Received: 1st of May 2009
Country of Origin: Cambodia
Date Reported: 25th September 2009

Dear [redacted]

Sequencing work has now been completed in respect of the samples you submitted and the details are as attached. Please note that all of our phylogenetic trees can be accessed via the internet at: http://www.wrlfmd.org/

Results Approved By: [redacted]

Official Stamp: [redacted]

Date: 25/9/09

[redacted]

To help us improve the quality of our service, please send any suggestions or requests to the Reference Laboratory by fax (+44 (0) 1483 232621 or email: elizabeth.byrom@bbsrc.ac.uk)

Molecular Epidemiology Report Form

IAH-P-EP-MEG-FOR-005-1
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Serotype: O	Report date: 24/09/2009
WRL Ref No: CAM/1/2004	Reported by: N.J. Knowles
Sender Ref: 19 CAM 1/04 R1B1	Checked by: D.P. King
Date collected: 23/06/2004	
Date received by WRLFMD: 01/05/2009	Topotype: ME-SA
Date received for sequencing: 01/06/2009	Genotype/strain: PanAsia
Species: Cattle	Sequence filename: CAM04-01.SEQ
Material used: R1B1 BTy1	Date sequence last updated: 12/08/2009
Region sequenced: VP1	Total no. of comparisons: 2111
RT-PCR primers: O-1C244F/EUR-2B52R; O-1C272F/EUR-2B52R	Min. no. of nt for comparison: 300 Total turn-around time: 146 days
No. of Nt determined: 639	Sequencing time: 115 days
No. of ambiguities: 0	
Gene length: 639	

Comments:

Ten Most Closely Related Viruses

Pos.	Virus name	Filename	No. nt compared	No. nt matched	No. of ambiguities	% Identity	% Difference
1	O/VIT/5/05* [TRRL]	VIT05-AE	639	634	0	99.22	0.78
2	O/VIT/7/2004	VIT04-07	639	634	0	99.22	0.78
3	O/VIT/8/05* [TRRL]	VIT05-AH	639	633	0	99.06	0.94
4	O/VIT/7/2005	VIT05-07	639	632	0	98.9	1.1
5	O/VIT/8/2004	VIT04-08	639	632	0	98.9	1.1
6	O/VIT/2/2003 (DQ165031)	VIT03-02	639	627	0	98.12	1.88
7	O/VIT/12/2002 (DQ165024)	VIT02-12	639	626	0	97.97	2.03
8	O/VIT/16/2002 (DQ165027)	VIT02-16	639	626	0	97.97	2.03
9	O/VIT/19/2002 (DQ165028)	VIT02-19	639	624	0	97.65	2.35
10	O/CAM/1/2008	CAM08-01	639	615	0	96.24	3.76

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 (AJ294927)	TAW99-02	639	612	0	95.77	4.23
2	O1/Manisa/TUR/69 (AJ251477)	TUR69--E	639	572	0	89.51	10.49
3	O/IND/53/79 [AF292107]	IND79A53	639	571	0	89.36	10.64
4	O/IND/R2/75* (AF204276)	IND75--A	639	563	0	88.11	11.89
5	O/TAI/189/87* [TRRL]	TAI87-AC	639	561	0	87.79	12.21
6	O/ISR/2/88 (DQ164899)	ISR88-02	639	558	0	87.32	12.68
7	O/MOR/1/91	MOR91-01	639	558	0	87.32	12.68
8	O/PHI/5/95 (DQ164946)	PHI95-05	639	523	0	81.85	18.15
9	O/HKN/6/83 (AJ294919)	HKN83-06	637	520	2	81.63	18.37
10	O1/BFS 1860/UK/67 (J02185)	UKG67--A	639	516	0	80.75	19.25

nt, nucleotides
*, not a WRLFMD reference number

Molecular Epidemiology Report Form

Serotype: O	Report date: 25/09/2009
WRL Ref No: CAM/5/2006	Reported by: N.J. Knowles
Sender Ref: 20 CAM 20/06 R1B2	Checked by: D.P. King
Date collected: 28/06/2006	
Date received by WRLFMD: 01/05/2009	Topotype: ME-SA
Date received for sequencing: 01/06/2009	Genotype/strain: PanAsia
Species: Cattle	Sequence filename: CAM06-05.SEQ
Material used: LK1 BHK2 BTy1	Date sequence last updated: 12/08/2009
Region sequenced: VP1	Total no. of comparisons: 2111
RT-PCR primers: O-1C244F/EUR-2B52R; O-1C272F/EUR-2B52R	Min. no. of nt for comparison: 300 Total turn-around time: 147 days
No. of Nt determined: 639	Sequencing time: 116 days
No. of ambiguities: 0	
Gene length: 639	

Comments:

Ten Most Closely Related Viruses

Pos.	Virus name	Filename	No. nt compared	No. nt matched	No. of ambiguities	% Identity	% Difference
1	O/CAM/4/2006	CAM06-04	639	636	0	99.53	0.47
2	O/VIT/17/2005	VIT05-17	639	627	0	98.12	1.88
3	O/VIT/1/2003 (DQ165030)	VIT03-01	639	620	0	97.03	2.97
4	O/VIT/14/2002 (DQ165026)	VIT02-14	639	620	0	97.03	2.97
5	O/BAR/1/99	BAR99-01	323	310	0	95.98	4.02
6	O/VIT/2/2002	VIT02-02	488	468	4	95.9	4.1
7	O/NEP/4/98 (DQ164935)	NEP98-04	639	612	0	95.77	4.23
8	O/SKR/2000 (AF428246)	SKR00-AC	639	612	0	95.77	4.23
9	O/SKR/2000 (AJ539139)	SKR00-AA	639	612	0	95.77	4.23
10	O/TAW/2/99 (AJ294927)	TAW99-02	639	612	0	95.77	4.23

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 (AJ294927)	TAW99-02	639	612	0	95.77	4.23
2	O/IND/53/79 [AF292107]	IND79A53	639	569	0	89.05	10.95
3	O1/Manisa/TUR/69 (AJ251477)	TUR69--E	639	569	0	89.05	10.95
4	O/IND/R2/75* (AF204276)	IND75--A	639	568	0	88.89	11.11
5	O/TAI/189/87* [TRRL]	TAI87-AC	639	563	0	88.11	11.89
6	O/ISR/2/88 (DQ164899)	ISR88-02	639	561	0	87.79	12.21
7	O/MOR/1/91	MOR91-01	639	559	0	87.48	12.52
8	O/HKN/6/83 (AJ294919)	HKN83-06	637	526	2	82.57	17.43
9	O/PHI/5/95 (DQ164946)	PHI95-05	639	527	0	82.47	17.53
10	O1/BFS 1860/UK/67 (J02185)	UKG67--A	639	521	0	81.53	18.47

nt, nucleotides
*, not a WRLFMD reference number

Molecular Epidemiology Report Form

Serotype: O
WRL Ref No: CAM/1/2008
Sender Ref: 21 CAM 2/08 R1B3
Date collected: 28/02/2008
Date received by WRLFMD: 01/05/2009
Date received for sequencing: 01/06/2009
Species: Cattle
Material used: LK1 BHK3 BTy1
Region sequenced: VP1
RT-PCR primers: O-1C244F/EUR-2B52R;
O-1C272F/EUR-2B52R
No. of Nt determined: 639
No. of ambiguities: 0
Gene length: 639

Report date: 24/09/2009
Reported by: N.J. Knowles
Checked by: D.P. King

Topotype: ME-SA
Genotype/strain: PanAsia
Sequence filename: CAM08-01.SEQ
Date sequence last updated: 24/09/2009
Total no. of comparisons: 2111
Min. no. of nt for comparison: 300
Total turn-around time: 146 days
Sequencing time: 115 days

Comments:

Ten Most Closely Related Viruses

Pos.	Virus name	Filename	No. nt compared	No. nt matched	No. of ambiguities	% Identity	% Difference
1	O/CAM/1/2004	CAM04-01	639	615	0	96.24	3.76
2	O/VIT/7/2004	VIT04-07	639	614	0	96.09	3.91
3	O/VIT/8/05* [TRRL]	VIT05-AH	639	614	0	96.09	3.91
4	O/VIT/2/2003 (DQ165031)	VIT03-02	639	612	0	95.77	4.23
5	O/VIT/5/05* [TRRL]	VIT05-AE	639	612	0	95.77	4.23
6	O/VIT/7/2005	VIT05-07	639	612	0	95.77	4.23
7	O/VIT/8/2004	VIT04-08	639	612	0	95.77	4.23
8	O/VIT/12/2002 (DQ165024)	VIT02-12	639	611	0	95.62	4.38
9	O/VIT/16/2002 (DQ165027)	VIT02-16	639	611	0	95.62	4.38
10	O/BAR/1/99	BAR99-01	323	308	0	95.36	4.64

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 (AJ294927)	TAW99-02	639	603	0	94.37	5.63
2	O/IND/53/79 [AF292107]	IND79A53	639	571	0	89.36	10.64
3	O1/Manisa/TUR/69 (AJ251477)	TUR69--E	639	567	0	88.73	11.27
4	O/IND/R2/75* (AF204276)	IND75--A	639	562	0	87.95	12.05
5	O/ISR/2/88 (DQ164899)	ISR88-02	639	558	0	87.32	12.68
6	O/MOR/1/91	MOR91-01	639	556	0	87.01	12.99
7	O/TAI/189/87* [TRRL]	TAI87-AC	639	556	0	87.01	12.99
8	O/PHI/5/95 (DQ164946)	PHI95-05	639	522	0	81.69	18.31
9	O/HKN/6/83 (AJ294919)	HKN83-06	637	513	2	80.53	19.47
10	O1/BFS 1860/UK/67 (J02185)	UKG67--A	639	511	0	79.97	20.03

nt, nucleotides
*, not a WRLFMD reference number

Report on FMDV O in Cambodia in 2004, 2006 & 2008

Batch: WRLFMD/2009/00026

Software: MEGA 4.0
No. of Taxa : 173
Data File : n:\evd\meg\db\fmdv\o\CAM2009a.meg
Data Title : O Cambodia 2004, 2006 & 2008
Data Type : Nucleotide (Coding)
Analysis : Phylogeny reconstruction
Tree Inference :
==============================
->Method : Neighbor-Joining
->Phylogeny Test and options : Bootstrap (1000 replicates; seed=21180)
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 : 639
No Of Bootstrap Reps = 1000
Only bootstrap values of 70% and above are shown

*, not a WRLFMD Ref. No.

F. Hamid, N.J. Knowles & J. Wadsworth,
24 September 2009