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To:

Fax Number:

To:

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From:

Date: 17th April 2009

Subject: Sequencing Report

No. Of Pages: 15

FAX

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Thank you.

Dear [REDACTED]

Virus isolates: O ETH/29/2008, O ETH/31/2008, O ETH/32/2008, O ETH/1/2009, O ETH/3/2009, O ETH/4/2009, O ETH/5/2009, O ETH/6/2009, O ETH/7/2009, O ETH/8/2009, O ETH/9/2009, O ETH/10/2009, and O ETH/11/2009

Sequencing work has now been completed in respect of the above virus isolates received at IAH Pirbright on 26th of March 2009 and the details are as attached. Please note all of our phylogenetic trees can be accessed via the internet at:

http://www.iah.bbsrc.ac.uk/primary_index/current_research/virus/Picomaviridae/Aphthovirus/index.html

Yours sincerely [REDACTED]

Head: World Reference Laboratory for FMD

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The Institute is sponsored by the Biotechnology and Biological Sciences Research Council. An Associated Institute of the University of Reading.

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IAH-P-EP-MEG-FOR-005-1

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<p>Serotype: O WRL Ref No: ETH/29/2008 Sender Ref: Eth/24/08/AMA Date collected: 07/09/2008 Date received by WRLFMD: 26/02/2009 Date received for sequencing: 07/04/2009 Species: Cattle Material used: 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</p>	<p>Report date: 17/04/2009 Reported by: N.J. Knowles Checked by: J.M. Hammond Topotype: EA-3 Genotype/strain: none designated Sequence filename: ETH08-29.SEQ Date sequence last updated: 15/04/2009 Total no. of comparisons: 1925 Min. no. of nt for comparison: 300 Total turn-around time: 50 days Sequencing time: 10 days</p>																																																																																								
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Serotype: O WRL Ref No: ETH/32/2008 Sender Ref: Eth/27/08/ORO Date collected: 17/12/2008 Date received by WRLFMD: 26/02/2009 Date received for sequencing: 07/04/2009 Species: Cattle Material used: BTyl 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: 17/04/2009 Reported by: N.J. Knowles Checked by: J.M. Hammond Topotype: EA-3 Genotype/strain: none designated Sequence filename: ETH08-32.SEQ Date sequence last updated: 15/04/2009 Total no. of comparisons: 1925 Min. no. of nt for comparison: 300 Total turn-around time: 50 days Sequencing time: 10 days																																																																																								
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Serotype: O WRL RefNo: ETH/6/2009 Sender Ref: Eth/32/09/ORO Date collected: 23/01/2009 Date received by WRLFMD: 26/02/2009 Date received for sequencing: 07/04/2009 Species: Cattle Material used: 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: 17/04/2009 Reported by: N.J. Knowles Checked by: J.M. Hammond Topotype: EA-3 Genotype/strain: none designated Sequence filename: ETH09-06.SEQ Date sequence last updated: 15/04/2009 Total no. of comparisons: 1925 Min. no. of nt for comparison: 300 Total turn-around time: 50 days Sequencing time: 10 days																																																																																								
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<p>nt, nucleotides *, not a WRLFMD reference number</p>																																																																																									

Molecular Epidemiology Report Form

IAH-P-EP-MEG-FOR-005-1

Page 1 of 1

Serotype: O WRL Ref No: ETH/10/2009 Sender Ref: Eth/36/09/ORO Date collected: 23/01/2009 Date received by WRLFMD: 26/02/2009 Date received for sequencing: 07/04/2009 Species: Cattle Material used: BTy1 Region sequenced: VPI 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: 17/04/2009 Reported by: N.J. Knowles Checked by: J.M. Hammond Topotype: EA-3 Genotype/strain: none designated Sequence filename: ETH09-10.SEQ Date sequence last updated: 15/04/2009 Total no. of comparisons: 1925 Min. no. of nt for comparison: 300 Total turn-around time: 50 days Sequencing time: 10 days						
Comments:							
Ten Most Closely Related Viruses							
Pos.	Virus name	Filename	No. nt compared	No. nt matched	No. of ambiguities	% Identity	% Difference
1	O/ETH/9/2009	ETH09-09	639	639	0	100	0
2	O/ETH/6/2009	ETH09-06	639	638	0	99.84	0.16
3	O/ETH/7/2009	ETH09-07	639	638	0	99.84	0.16
4	O/ETH/3/2009	ETH09-03	639	637	0	99.69	0.31
5	O/ETH/1/2009	ETH09-01	639	636	0	99.53	0.47
6	O/ETH/11/2009	ETH09-11	639	635	0	99.37	0.63
7	O/ETH/4/2009	ETH09-04	639	635	0	99.37	0.63
8	O/ETH/5/2009	ETH09-05	639	634	0	99.22	0.78
9	O/ETH/8/2009	ETH09-08	639	634	0	99.22	0.78
10	O/ETH/38/2005 (2003/4)	ETH05-38	639	609	0	95.31	4.69
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	547	0	85.6	14.4
2	O/IND/53/79 [AF292107]	IND79A53	639	546	0	85.45	14.55
3	O1/Manisa/TUR/69 (AJ251477)	TUR69-E	639	545	0	85.29	14.71
4	O/IND/R2/75* [AF204276]	IND75-A	639	542	0	84.82	15.18
5	O/MOR/1/91	MOR91-01	639	539	0	84.35	15.65
6	O/ISR/2/88 (DQ164899)	ISR88-02	639	537	0	84.04	15.96
7	O/TAI/189/87* [TRRL]	TAI87-AC	639	536	0	83.88	16.12
8	O/HKN/6/83 (AJ294919)	HKN83-06	637	509	2	79.91	20.09
9	O/PHI/5/95 (DQ164946)	PHI95-05	639	509	0	79.66	20.34
10	O1/BFS 1860/UK/67 (J02185)	UKG67-A	639	503	0	78.72	21.28
nt, nucleotides *, not a WRLFMD reference number							

Molecular Epidemiology Report Form

IAH-P-EP-MEG-FOR-005-1

Page 1 of 1

Serotype: O WRL RefNo: ETH/11/2009 Sender Ref: Eth/37/09/ORO Date collected: 23/01/2009 Date received by WRLFMD: 26/02/2009 Date received for sequencing: 07/04/2009 Species: Cattle Material used: 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: 17/04/2009 Reported by: N.J. Knowles Checked by: J.M. Hammond Topotype: EA-3 Genotype/strain: none designated Sequence filename: ETH09-11.SEQ Date sequence last updated: 15/04/2009 Total no. of comparisons: 1925 Min. no. of nt for comparison: 300 Total turn-around time: 50 days Sequencing time: 10 days						
Comments:							
Ten Most Closely Related Viruses							
Pos.	Virus name	Filename	No. nt compared	No. nt matched	No. of ambiguities	% Identity	% Difference
1	O/ETH/8/2009	ETH09-08	639	638	0	99.84	0.16
2	O/ETH/6/2009	ETH09-06	639	636	0	99.53	0.47
3	O/ETH/7/2009	ETH09-07	639	636	0	99.53	0.47
4	O/ETH/10/2009	ETH09-10	639	635	0	99.37	0.63
5	O/ETH/3/2009	ETH09-03	639	635	0	99.37	0.63
6	O/ETH/9/2009	ETH09-09	639	635	0	99.37	0.63
7	O/ETH/1/2009	ETH09-01	639	634	0	99.22	0.78
8	O/ETH/4/2009	ETH09-04	639	633	0	99.06	0.94
9	O/ETH/5/2009	ETH09-05	639	632	0	98.9	1.1
10	O/ETH/49/2005	ETH05-49	639	609	0	95.31	4.69
Relationships to Reference Virus Strains							
Pos.	Virus name	Filename	No. nt compared	No. nt matched	No. of ambiguities	% Identity	% Difference
1	O/IND/53/79 [AF292107]	IND79A53	639	545	0	85.29	14.71
2	O/TAW/2/99 (AJ294927)	TAW99-02	639	545	0	85.29	14.71
3	O1/Manisa/TUR/69 (AJ251477)	TUR69-E	639	543	0	84.98	15.02
4	O/IND/R2/75* [AF204276]	IND75-A	639	541	0	84.66	15.34
5	O/MOR/1/91	MOR91-01	639	538	0	84.19	15.81
6	O/ISR/2/88 (DQ164899)	ISR88-02	639	536	0	83.88	16.12
7	O/TAI/189/87* [TRRL]	TAI87-AC	639	534	0	83.57	16.43
8	O/HKN/6/83 (AJ294919)	HKN83-06	637	508	2	79.75	20.25
9	O/PHI/5/95 (DQ164946)	PHI95-05	639	508	0	79.5	20.5
10	O1/BFS 1860/UK/67 (J02185)	UKG67-A	639	502	0	78.56	21.44
nt, nucleotides *, not a WRLFMD reference number							

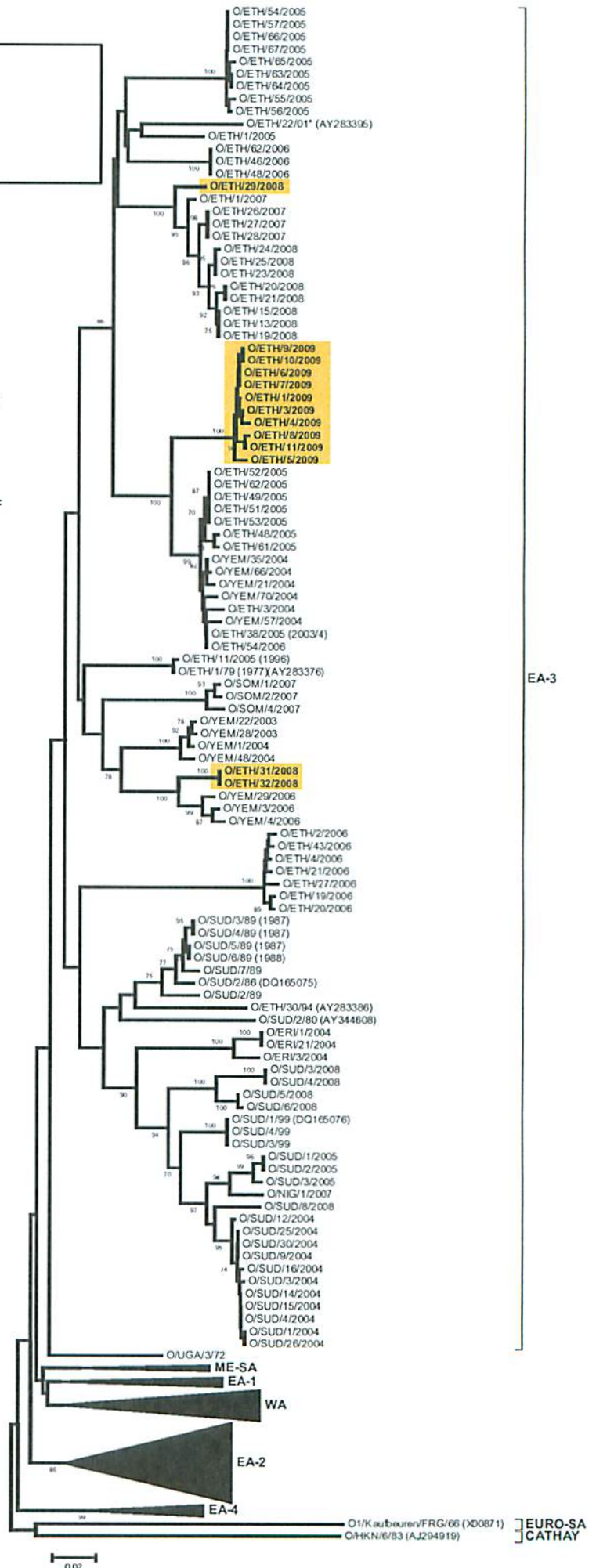
Report on FMDV O from Ethiopia in 2008-2009

Batch: WRLFMD/2009/00008

Software: MEGA 4.0
 No. of Taxa : 196
 Data File : n:\evd\meg\db\fmvdv\o\ETH2009a.meg
 Data Title : O Ethiopia 2008-9
 Data Type : Nucleotide (Coding)
 Analysis : Phylogeny reconstruction
 Tree Inference : =====
 ->Method : Neighbor-Joining
 ->Phylogeny Test and options : Bootstrap (1000 replicates; seed=46543)
 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
 Only bootstrap values of 70% and above are shown

*, not a WRLFMD Ref. No.

N.J. Knowles & J. Wadsworth, 17 April 2009



EA-3

EURO-SA
CATHAY