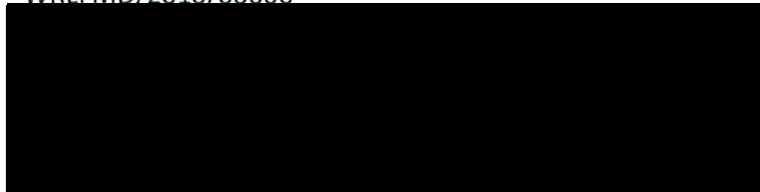




INSTITUTE FOR ANIMAL HEALTH
Director: Professor Martin W. Shirley, PhD
PIRBRIGHT LABORATORY
Ash Road,
Pirbright,
Surrey,
GU24 0NF
Intn Tel: 00 44 1483 232441
Tel: 01483 232441 Fax: 01483 232621

FMD Sequencing Report

Lab Reference WRL Batch Number: WRLFMD/2010/00006
Sender Details:



Date Received: 5th February 2010
Country of Origin: Myanmar
Date Reported: 4th March 2010

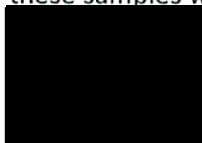
Re: Serotype O

Dear Dr. Linchongsubongkoch,

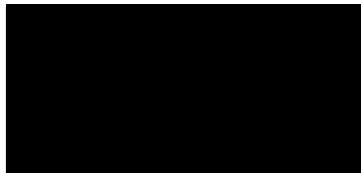
Sequencing work has now been completed in respect of the samples you submitted and the details are as attached. Please note that all of our phylogenetic trees can be accessed via the internet at: <http://www.wrlfmd.org/>

Please note that some of these samples were collected over 12 months ago.

Results Approved By:

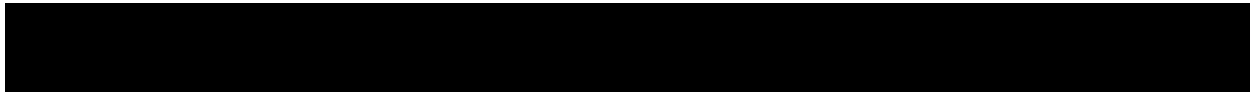


Official Stamp:



Date:

4/3/2010



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.wilson@bbsrc.ac.uk)

FAO World Reference Laboratory for Foot-and-Mouth Disease (WRLFMD)

Genotyping Report

Date: 3 March 2010

FMDV type O

Country: Myanmar

Period: 2008-2009

No. of isolates: 4

BATCH: WRLFMD/2010/00006



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FAO World Reference Laboratory for FMD Genotyping Report

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Page 1 of 1

Serotype: O WRLFMD Ref No: MYA/3/2008 Batch No: WRLFMD/2010/00006 Sender Ref: MYA 2/08 R1B1 Location: Mingalardow Township, Yangow, Myanmar Date collected: 16/10/2008 Date received by WRLFMD: 05/02/2010 Date received for sequencing: 24/02/2010 Species: Cattle Material used: LK1 BHK1 BTy1 Region sequenced: VP1 RT-PCR primers: O-1C244F/EUR-2B52R O-1C272F/EUR-2B52R	Report date: 02/03/2010 Reported by: N.J. Knowles Checked by: D.P. King Topotype: SEA Genotype/strain: Mya-98 Sequence filename: MYA08-03.SEQ Date sequence last updated: 02/03/2010 No. of Nt determined: 639 No. of ambiguities: 0 Gene length: 639 Total no. of comparisons: 2264 Min. no. of nt for comparison: 300 Total turn-around time: 25 days Sequencing time: 6 days
Comments:	

Most Closely Related Viruses									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	O/LAO/1/2007	LAO07-01	639	631	0	98.75	1.25	SEA	Mya-98
2	O/MAY/4/2007	MAY07-04	639	631	0	98.75	1.25	SEA	Mya-98
3	O/MAY/5/2007	MAY07-05	639	631	0	98.75	1.25	SEA	Mya-98
4	O/MAY/7/2007	MAY07-07	639	631	0	98.75	1.25	SEA	Mya-98
5	O/TAI/7/2007	TAI07-07	639	631	0	98.75	1.25	SEA	Mya-98
6	O/MAY/6/2007	MAY07-06	639	630	0	98.59	1.41	SEA	Mya-98
7	O/MYA/2/2008	MYA08-02	639	630	0	98.59	1.41	SEA	Mya-98
8	O/TAI/14/2007	TAI07-14	639	630	0	98.59	1.41	SEA	Mya-98
9	O/TAI/9/2007	TAI07-09	639	630	0	98.59	1.41	SEA	Mya-98
10	O/TAI 5/08* (TRRL)	TAI08-AA	639	630	0	98.59	1.41	SEA	Mya-98
Most Closely Related Reference Viruses									
(see http://www.wrlfmd.org/fmd_genotyping/prototypes.htm)									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	O/MYA/7/98 (DQ164925)	MYA98-07	639	593	0	92.80	7.20	SEA	Mya-98
2	O/TAI/189/87* (TRRL)	TAI87-AC	639	567	0	88.73	11.27	SEA	unnamed
3	O/IND/53/79 (AF292107)	IND79A53	639	543	0	84.98	15.02	ME-SA	unnamed
4	O/IND/R2/75* (AF204276)	IND75--A	639	543	0	84.98	15.02	ME-SA	unnamed
5	O1/Manisa/TUR/69 (AY593823)	TUR69--G	639	541	0	84.66	15.34	ME-SA	unnamed
6	O/IRN/8/2005	IRN05-08	639	540	0	84.51	15.49	ME-SA	PanAsia-2
7	O/UKG/35/2001 (AJ539141)	UKG01-35	639	539	0	84.35	15.65	ME-SA	PanAsia
8	O/CAM/3/98 (AJ294910)	CAM98-03	639	538	0	84.19	15.81	SEA	Cam-94
9	O/ETH/1/2007 (FJ798137)	ETH07-01	639	533	0	83.41	16.59	EA-3	unnamed
10	O/K83/79* (AJ303511)	KEN79B83	638	532	1	83.39	16.61	EA-1	unnamed

nt, nucleotides

*, not a WRLFMD reference number

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Serotype: O WRLFMD Ref No: MYA/9/2009 Batch No: WRLFMD/2010/00006 Sender Ref: MYA 1/09 R1B1 Location: Kawmu Township, Yangon, Myanmar Date collected: 24/01/2009 Date received by WRLFMD: 05/02/2010 Date received for sequencing: 24/02/2010 Species: Cattle Material used: LK1 BHK1 BTy1 Region sequenced: VP1 RT-PCR primers: O-1C244F/EUR-2B52R O-1C272F/EUR-2B52R	Report date: 02/03/2010 Reported by: N.J. Knowles Checked by: D.P. King Topotype: SEA Genotype/strain: Mya-98 Sequence filename: MYA09-09.SEQ Date sequence last updated: 02/03/2010 No. of Nt determined: 639 No. of ambiguities: 0 Gene length: 639 Total no. of comparisons: 2264 Min. no. of nt for comparison: 300 Total turn-around time: 25 days Sequencing time: 6 days
Comments:	

Most Closely Related Viruses									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	O/MYA/1/2009	MYA09-01	639	639	0	100.00	0.00	SEA	Mya-98
2	O/LAO/2/2008	LAO08-02	639	628	0	98.28	1.72	SEA	Mya-98
3	O/LAO/3/2008	LAO08-03	639	628	0	98.28	1.72	SEA	Mya-98
4	O/TAI/9/2007	TAI07-09	639	628	0	98.28	1.72	SEA	Mya-98
5	O/LAO/1/2007	LAO07-01	639	627	0	98.12	1.88	SEA	Mya-98
6	O/MAY/4/2007	MAY07-04	639	627	0	98.12	1.88	SEA	Mya-98
7	O/MAY/5/2007	MAY07-05	639	627	0	98.12	1.88	SEA	Mya-98
8	O/MAY/7/2007	MAY07-07	639	627	0	98.12	1.88	SEA	Mya-98
9	O/TAI/7/2007	TAI07-07	639	627	0	98.12	1.88	SEA	Mya-98
10	O/MAY/6/2007	MAY07-06	639	626	0	97.97	2.03	SEA	Mya-98
Most Closely Related Reference Viruses									
(see http://www.wrlfmd.org/fmd_genotyping/prototypes.htm)									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	O/MYA/7/98 (DQ164925)	MYA98-07	639	593	0	92.80	7.20	SEA	Mya-98
2	O/TAI/189/87* (TRRL)	TAI87-AC	639	573	0	89.67	10.33	SEA	unnamed
3	O/CAM/3/98 (AJ294910)	CAM98-03	639	544	0	85.13	14.87	SEA	Cam-94
4	O1/Manisa/TUR/69 (AY593823)	TUR69--G	639	544	0	85.13	14.87	ME-SA	unnamed
5	O/IND/R2/75* (AF204276)	IND75--A	639	543	0	84.98	15.02	ME-SA	unnamed
6	O/IND/53/79 (AF292107)	IND79A53	639	541	0	84.66	15.34	ME-SA	unnamed
7	O/UKG/35/2001 (AJ539141)	UKG01-35	639	539	0	84.35	15.65	ME-SA	PanAsia
8	O/K83/79* (AJ303511)	KEN79B83	638	537	1	84.17	15.83	EA-1	unnamed
9	O/IRN/8/2005	IRN05-08	639	534	0	83.57	16.43	ME-SA	PanAsia-2
10	O/ETH/1/2007 (FJ798137)	ETH07-01	639	532	0	83.26	16.74	EA-3	unnamed

nt, nucleotides

*, not a WRLFMD reference number

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Serotype: O WRLFMD Ref No: MYA/10/2009 Batch No: WRLFMD/2010/00006 Sender Ref: MUA 2/09 R1B1 Location: Magway Township, Magway District, Myanmar Date collected: 29/01/2009 Date received by WRLFMD: 05/02/2010 Date received for sequencing: 24/02/2010 Species: Cattle Material used: LK1 BHK1 BTy1 Region sequenced: VP1 RT-PCR primers: O-1C244F/EUR-2B52R O-1C272F/EUR-2B52R	Report date: 02/03/2010 Reported by: N.J. Knowles Checked by: D.P. King Topotype: SEA Genotype/strain: Mya-98 Sequence filename: MYA09-10.SEQ Date sequence last updated: 02/03/2010 No. of Nt determined: 639 No. of ambiguities: 0 Gene length: 639 Total no. of comparisons: 2264 Min. no. of nt for comparison: 300 Total turn-around time: 25 days Sequencing time: 6 days
Comments:	

Most Closely Related Viruses									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	O/MYA/11/2009	MYA09-11	639	635	0	99.37	0.63	SEA	Mya-98
2	O/MYA/5/2009	MYA09-05	639	606	0	94.84	5.16	SEA	Mya-98
3	O/MYA/6/2009	MYA09-06	639	606	0	94.84	5.16	SEA	Mya-98
4	O/MYA/1/04* (TRRL)	MYA04-AA	639	604	0	94.52	5.48	SEA	Mya-98
5	O/MYA/2/04* (TRRL)	MYA04-AB	639	604	0	94.52	5.48	SEA	Mya-98
6	O/TAI/22/2009	TAI09-22	639	604	0	94.52	5.48	SEA	Mya-98
7	O/TAI/36/04* (TRRL)	TAI04-AB	639	598	0	93.58	6.42	SEA	Mya-98
8	O/VIT/6/05* (TRRL)	VIT05-AF	639	596	0	93.27	6.73	SEA	Mya-98
9	O/HLJOC12/03 (China) (DQ119643)	CHA03-AA	633	590	0	93.21	6.79	SEA	Mya-98
10	O/MYA/1/98 (AJ303521)	MYA98-01	630	587	9	93.17	6.83	SEA	Mya-98
Most Closely Related Reference Viruses									
(see http://www.wrlfmd.org/fmd_genotyping/prototypes.htm)									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	O/MYA/7/98 (DQ164925)	MYA98-07	639	593	0	92.80	7.20	SEA	Mya-98
2	O/TAI/189/87* (TRRL)	TAI87-AC	639	578	0	90.45	9.55	SEA	unnamed
3	O/IRN/8/2005	IRN05-08	639	546	0	85.45	14.55	ME-SA	PanAsia-2
4	O/UKG/35/2001 (AJ539141)	UKG01-35	639	543	0	84.98	15.02	ME-SA	PanAsia
5	O/CAM/3/98 (AJ294910)	CAM98-03	639	542	0	84.82	15.18	SEA	Cam-94
6	O/ETH/1/2007 (FJ798137)	ETH07-01	639	539	0	84.35	15.65	EA-3	unnamed
7	O/IND/53/79 (AF292107)	IND79A53	639	538	0	84.19	15.81	ME-SA	unnamed
8	O/IND/R2/75* (AF204276)	IND75--A	639	538	0	84.19	15.81	ME-SA	unnamed
9	O/ETH/3/2004 (FJ798109)	ETH04-03	639	535	0	83.72	16.28	EA-3	unnamed
10	O/SUD/2/86 (DQ165075)	SUD86-02	639	529	0	82.79	17.21	EA-3	unnamed

nt, nucleotides

*, not a WRLFMD reference number

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Serotype: O	Report date: 02/03/2010
WRLFMD Ref No: MYA/11/2009	Reported by: N.J. Knowles
Batch No: WRLFMD/2010/00006	Checked by: D.P. King
Sender Ref: MYA 3/09 R1 B1	
Location: Ann Township, Tyaukphyo, Myanmar	Topotype: SEA
Date collected: 25/05/2009	Genotype/strain: Mya-98
Date received by WRLFMD: 05/02/2010	Sequence filename: MYA09-11.SEQ
Date received for sequencing: 24/02/2010	Date sequence last updated: 02/03/2010
Species: Cattle	No. of Nt determined: 639
Material used: LK1 BHK1 BTy1	No. of ambiguities: 0
Region sequenced: VP1	Gene length: 639
RT-PCR primers: O-1C244F/EUR-2B52R	Total no. of comparisons: 2264
O-1C272F/EUR-2B52R	Min. no. of nt for comparison: 300
	Total turn-around time: 25 days
	Sequencing time: 6 days
Comments:	

Most Closely Related Viruses									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	O/MYA/10/2009	MYA09-10	639	635	0	99.37	0.63	SEA	Mya-98
2	O/MYA/5/2009	MYA09-05	639	610	0	95.46	4.54	SEA	Mya-98
3	O/MYA/6/2009	MYA09-06	639	610	0	95.46	4.54	SEA	Mya-98
4	O/MYA/1/04* (TRRL)	MYA04-AA	639	608	0	95.15	4.85	SEA	Mya-98
5	O/MYA/2/04* (TRRL)	MYA04-AB	639	608	0	95.15	4.85	SEA	Mya-98
6	O/TAI/22/2009	TAI09-22	639	608	0	95.15	4.85	SEA	Mya-98
7	O/TAI/36/04* (TRRL)	TAI04-AB	639	602	0	94.21	5.79	SEA	Mya-98
8	O/VIT/6/05* (TRRL)	VIT05-AF	639	600	0	93.90	6.10	SEA	Mya-98
9	O/HLJOC12/03 (China) (DQ119643)	CHA03-AA	633	594	0	93.84	6.16	SEA	Mya-98
10	O/MYA/1/98 (AJ303521)	MYA98-01	630	591	9	93.81	6.19	SEA	Mya-98
Most Closely Related Reference Viruses									
(see http://www.wrlfmd.org/fmd_genotyping/prototypes.htm)									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	O/MYA/7/98 (DQ164925)	MYA98-07	639	597	0	93.43	6.57	SEA	Mya-98
2	O/TAI/189/87* (TRRL)	TAI87-AC	639	582	0	91.08	8.92	SEA	unnamed
3	O/IRN/8/2005	IRN05-08	639	545	0	85.29	14.71	ME-SA	PanAsia-2
4	O/CAM/3/98 (AJ294910)	CAM98-03	639	544	0	85.13	14.87	SEA	Cam-94
5	O/UKG/35/2001 (AJ539141)	UKG01-35	639	542	0	84.82	15.18	ME-SA	PanAsia
6	O/IND/R2/75* (AF204276)	IND75--A	639	540	0	84.51	15.49	ME-SA	unnamed
7	O/ETH/1/2007 (FJ798137)	ETH07-01	639	538	0	84.19	15.81	EA-3	unnamed
8	O/IND/53/79 (AF292107)	IND79A53	639	538	0	84.19	15.81	ME-SA	unnamed
9	O/ETH/3/2004 (FJ798109)	ETH04-03	639	536	0	83.88	16.12	EA-3	unnamed
10	O/SUD/2/86 (DQ165075)	SUD86-02	639	532	0	83.26	16.74	EA-3	unnamed

nt, nucleotides

*, not a WRLFMD reference number

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Report on FMDV O in Myanmar in 2008-2009

Batch: WRLFMD/2010/00006

Software: MEGA 4.0

No. of Taxa : 222

Data File : n:\evd\meg\db\fmvd\o\SEA2010a.meg

Data Title : Southeast Asia 2008-2009

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 : 639

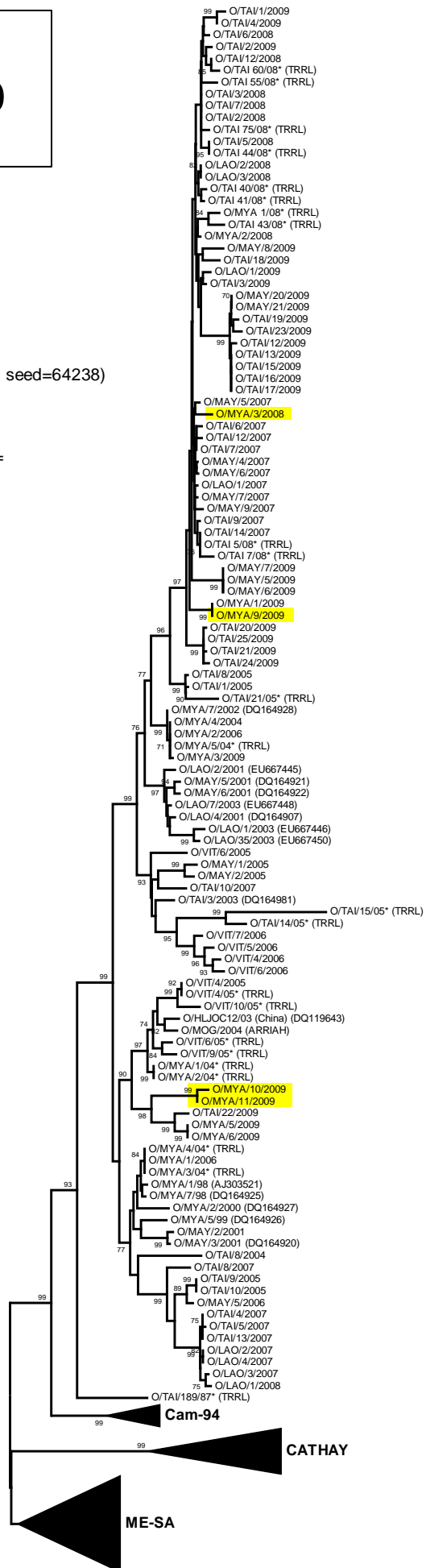
No Of Bootstrap Reps = 1000

Only bootstrap values of 70% and above are shown

*, not a WRLFMD Ref. No.

N.J. Knowles, J. Wadsworth & F. Hamid, 03 March 2010

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Mya-98

SEA