

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

Genotyping Report

Report Date for this Batch: 2 July 2013

FMDV type O

Country: Laos

Period: 2012

No. of samples: 5

BATCH: WRLFMD/2013/00014



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FAO World Reference Laboratory for FMD Genotyping Report

IAH-P-EP-MEG-FOR-005-3

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Serotype: O	Report date: 02/07/2013
WRLFMD Ref No: LAO/1/2012	Reported by: N.J. Knowles
Batch No: WRLFMD/2013/00014	Checked by: D.P. King
Sender Ref: LAO 10/12R3	
Location: Vientiane, Laos	Topotype: ME-SA
Date collected: 28/12/2012	Genotype/strain: PanAsia
Date received by WRLFMD: 17/06/2013	Sequence filename: LAO12-01.SEQ
Date received for sequencing: 21/06/2013	Date sequence last updated: 02/07/2013
Species: Cattle	No. of Nt determined: 639
Material used: BTy1 19/06/2013	No. of ambiguities: 0
Region sequenced: VP1	Gene length: 639
RT-PCR primers: O-1C244F/EUR-2B52R	Total no. of comparisons: 3663
O-1C272F/EUR-2B52R	Min. no. of nt for comparison: 600
	Total turn-around time: 15 days
	Sequencing time: 11 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/2/2012	LAO12-02	639	639	0	100.00	0.00	ME-SA	PanAsia
2	O/LAO/3/2012	LAO12-03	639	639	0	100.00	0.00	ME-SA	PanAsia
3	O/LAO/5/2012	LAO12-05	639	639	0	100.00	0.00	ME-SA	PanAsia
4	O/LAO/2/2010	LAO10-02	639	638	0	99.84	0.16	ME-SA	PanAsia
5	O/LAO/4/2012	LAO12-04	639	638	0	99.84	0.16	ME-SA	PanAsia
6	O/VIT/7/2011	VIT11-07	639	638	0	99.84	0.16	ME-SA	PanAsia
7	O/VIT/12/2011	VIT11-12	639	637	0	99.69	0.31	ME-SA	PanAsia
8	O/VIT/4/2011	VIT11-04	639	637	0	99.69	0.31	ME-SA	PanAsia
9	O/VIT/8/2011	VIT11-08	639	637	0	99.69	0.31	ME-SA	PanAsia
10	O/VIT/9/2011	VIT11-09	639	637	0	99.69	0.31	ME-SA	PanAsia
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/UKG/35/2001 (AJ539141)	UKG01-35	639	596	0	93.27	6.73	ME-SA	PanAsia
2	O/KUW/3/97 (DQ164904)	KUW97-03	639	586	0	91.71	8.29	ME-SA	Ind-2001a
3	O/IRN/31/2009	IRN09-31	639	581	0	90.92	9.08	ME-SA	PanAsia-2 ^{FAR-09}
4	O/IRN/8/2005	IRN05-08	639	581	0	90.92	9.08	ME-SA	PanAsia-2
5	O/IRN/18/2010	IRN10-18	639	578	0	90.45	9.55	ME-SA	PanAsia-2 ^{BAL-09}
6	O/OMN/7/2001 (DQ164941)	OMN01-07	639	578	0	90.45	9.55	ME-SA	Ind-2001b
7	O/BHU/3/2009	BHU09-03	639	576	0	90.14	9.86	ME-SA	Ind-2001d
8	O/UAE/4/2008	UAE08-04	636	572	0	89.94	10.06	ME-SA	Ind-2001c
9	O/PAK/16/2010	PAK10-16	639	574	0	89.83	10.17	ME-SA	PanAsia-2 ^{PUN-10}
10	O/TUR/25/2008* (FMDI)	TUR08-AD	639	574	0	89.83	10.17	ME-SA	PanAsia-2 ^{TER-08}

nt, nucleotides

*. not a WRLFMD reference number

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Serotype: O	Report date: 02/07/2013
WRLFMD Ref No: LAO/2/2012	Reported by: N.J. Knowles
Batch No: WRLFMD/2013/00014	Checked by: D.P. King
Sender Ref: LAO 11/12R3	
Location: Vientiane, Laos	Topotype: ME-SA
Date collected: 28/12/2012	Genotype/strain: PanAsia
Date received by WRLFMD: 17/06/2013	Sequence filename: LAO12-02.SEQ
Date received for sequencing: 21/06/2013	Date sequence last updated: 02/07/2013
Species: Cattle	No. of Nt determined: 639
Material used: BTy1 19/06/2013	No. of ambiguities: 0
Region sequenced: VP1	Gene length: 639
RT-PCR primers: O-1C244F/EUR-2B52R	Total no. of comparisons: 3663
O-1C272F/EUR-2B52R	Min. no. of nt for comparison: 600
	Total turn-around time: 15 days
	Sequencing time: 11 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/1/2012	LAO12-01	639	639	0	100.00	0.00	ME-SA	PanAsia
2	O/LAO/3/2012	LAO12-03	639	639	0	100.00	0.00	ME-SA	PanAsia
3	O/LAO/5/2012	LAO12-05	639	639	0	100.00	0.00	ME-SA	PanAsia
4	O/LAO/2/2010	LAO10-02	639	638	0	99.84	0.16	ME-SA	PanAsia
5	O/LAO/4/2012	LAO12-04	639	638	0	99.84	0.16	ME-SA	PanAsia
6	O/VIT/7/2011	VIT11-07	639	638	0	99.84	0.16	ME-SA	PanAsia
7	O/VIT/12/2011	VIT11-12	639	637	0	99.69	0.31	ME-SA	PanAsia
8	O/VIT/4/2011	VIT11-04	639	637	0	99.69	0.31	ME-SA	PanAsia
9	O/VIT/8/2011	VIT11-08	639	637	0	99.69	0.31	ME-SA	PanAsia
10	O/VIT/9/2011	VIT11-09	639	637	0	99.69	0.31	ME-SA	PanAsia
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Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	O/UKG/35/2001 (AJ539141)	UKG01-35	639	596	0	93.27	6.73	ME-SA	PanAsia
2	O/KUW/3/97 (DQ164904)	KUW97-03	639	586	0	91.71	8.29	ME-SA	Ind-2001a
3	O/IRN/31/2009	IRN09-31	639	581	0	90.92	9.08	ME-SA	PanAsia-2 ^{FAR-09}
4	O/IRN/8/2005	IRN05-08	639	581	0	90.92	9.08	ME-SA	PanAsia-2
5	O/IRN/18/2010	IRN10-18	639	578	0	90.45	9.55	ME-SA	PanAsia-2 ^{BAL-09}
6	O/OMN/7/2001 (DQ164941)	OMN01-07	639	578	0	90.45	9.55	ME-SA	Ind-2001b
7	O/BHU/3/2009	BHU09-03	639	576	0	90.14	9.86	ME-SA	Ind-2001d
8	O/UAE/4/2008	UAE08-04	636	572	0	89.94	10.06	ME-SA	Ind-2001c
9	O/PAK/16/2010	PAK10-16	639	574	0	89.83	10.17	ME-SA	PanAsia-2 ^{PUN-10}
10	O/TUR/257/2008* (FMDI)	TUR08-AD	639	574	0	89.83	10.17	ME-SA	PanAsia-2 ^{TER-08}

nt, nucleotides

*, not a WRLFMD reference number

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Serotype: O WRLFMD Ref No: LAO/3/2012 Batch No: WRLFMD/2013/00014 Sender Ref: LAO 12/12R3 Location: Vientiane, Laos Date collected: 28/12/2012 Date received by WRLFMD: 17/06/2013 Date received for sequencing: 21/06/2013 Species: Cattle Material used: BTy1 19/06/2013 Region sequenced: VP1 RT-PCR primers: O-1C244F/EUR-2B52R O-1C272F/EUR-2B52R	Report date: 02/07/2013 Reported by: N.J. Knowles Checked by: D.P. King Topotype: ME-SA Genotype/strain: PanAsia Sequence filename: LAO12-03.SEQ Date sequence last updated: 02/07/2013 No. of Nt determined: 639 No. of ambiguities: 0 Gene length: 639 Total no. of comparisons: 3663 Min. no. of nt for comparison: 600 Total turn-around time: 15 days Sequencing time: 11 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/1/2012	LAO12-01	639	639	0	100.00	0.00	ME-SA	PanAsia
2	O/LAO/2/2012	LAO12-02	639	639	0	100.00	0.00	ME-SA	PanAsia
3	O/LAO/5/2012	LAO12-05	639	639	0	100.00	0.00	ME-SA	PanAsia
4	O/LAO/2/2010	LAO10-02	639	638	0	99.84	0.16	ME-SA	PanAsia
5	O/LAO/4/2012	LAO12-04	639	638	0	99.84	0.16	ME-SA	PanAsia
6	O/VIT/7/2011	VIT11-07	639	638	0	99.84	0.16	ME-SA	PanAsia
7	O/VIT/12/2011	VIT11-12	639	637	0	99.69	0.31	ME-SA	PanAsia
8	O/VIT/4/2011	VIT11-04	639	637	0	99.69	0.31	ME-SA	PanAsia
9	O/VIT/8/2011	VIT11-08	639	637	0	99.69	0.31	ME-SA	PanAsia
10	O/VIT/9/2011	VIT11-09	639	637	0	99.69	0.31	ME-SA	PanAsia
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2	O/KUW/3/97 (DQ164904)	KUW97-03	639	586	0	91.71	8.29	ME-SA	Ind-2001a
3	O/IRN/31/2009	IRN09-31	639	581	0	90.92	9.08	ME-SA	PanAsia-2 ^{FAR-09}
4	O/IRN/8/2005	IRN05-08	639	581	0	90.92	9.08	ME-SA	PanAsia-2
5	O/IRN/18/2010	IRN10-18	639	578	0	90.45	9.55	ME-SA	PanAsia-2 ^{BAL-09}
6	O/OMN/7/2001 (DQ164941)	OMN01-07	639	578	0	90.45	9.55	ME-SA	Ind-2001b
7	O/BHU/3/2009	BHU09-03	639	576	0	90.14	9.86	ME-SA	Ind-2001d
8	O/UAE/4/2008	UAE08-04	636	572	0	89.94	10.06	ME-SA	Ind-2001c
9	O/PAK/16/2010	PAK10-16	639	574	0	89.83	10.17	ME-SA	PanAsia-2 ^{PUN-10}
10	O/TUR/257/2008* (FMDI)	TUR08-AD	639	574	0	89.83	10.17	ME-SA	PanAsia-2 ^{TER-08}

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WRLFMD Ref No: LAO/4/2012	Reported by: N.J. Knowles
Batch No: WRLFMD/2013/00014	Checked by: D.P. King
Sender Ref: LAO 13/12R3	
Location: Vientiane, Laos	Topotype: ME-SA
Date collected: 28/12/2012	Genotype/strain: PanAsia
Date received by WRLFMD: 17/06/2013	Sequence filename: LAO12-04.SEQ
Date received for sequencing: 21/06/2013	Date sequence last updated: 02/07/2013
Species: Cattle	No. of Nt determined: 639
Material used: BTy1 19/06/2013	No. of ambiguities: 0
Region sequenced: VP1	Gene length: 639
RT-PCR primers: O-1C244F/EUR-2B52R	Total no. of comparisons: 3663
O-1C272F/EUR-2B52R	Min. no. of nt for comparison: 600
	Total turn-around time: 15 days
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1	O/LAO/1/2012	LAO12-01	639	638	0	99.84	0.16	ME-SA	PanAsia
2	O/LAO/2/2012	LAO12-02	639	638	0	99.84	0.16	ME-SA	PanAsia
3	O/LAO/3/2012	LAO12-03	639	638	0	99.84	0.16	ME-SA	PanAsia
4	O/LAO/5/2012	LAO12-05	639	638	0	99.84	0.16	ME-SA	PanAsia
5	O/LAO/2/2010	LAO10-02	639	637	0	99.69	0.31	ME-SA	PanAsia
6	O/VIT/7/2011	VIT11-07	639	637	0	99.69	0.31	ME-SA	PanAsia
7	O/VIT/12/2011	VIT11-12	639	636	0	99.53	0.47	ME-SA	PanAsia
8	O/VIT/4/2011	VIT11-04	639	636	0	99.53	0.47	ME-SA	PanAsia
9	O/VIT/8/2011	VIT11-08	639	636	0	99.53	0.47	ME-SA	PanAsia
10	O/VIT/9/2011	VIT11-09	639	636	0	99.53	0.47	ME-SA	PanAsia
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2	O/KUW/3/97 (DQ164904)	KUW97-03	639	585	0	91.55	8.45	ME-SA	Ind-2001a
3	O/IRN/31/2009	IRN09-31	639	580	0	90.77	9.23	ME-SA	PanAsia-2 ^{FAR-09}
4	O/IRN/8/2005	IRN05-08	639	580	0	90.77	9.23	ME-SA	PanAsia-2
5	O/IRN/18/2010	IRN10-18	639	577	0	90.30	9.70	ME-SA	PanAsia-2 ^{BAL-09}
6	O/OMN/7/2001 (DQ164941)	OMN01-07	639	577	0	90.30	9.70	ME-SA	Ind-2001b
7	O/BHU/3/2009	BHU09-03	639	575	0	89.98	10.02	ME-SA	Ind-2001d
8	O/UAE/4/2008	UAE08-04	636	571	0	89.78	10.22	ME-SA	Ind-2001c
9	O/PAK/16/2010	PAK10-16	639	573	0	89.67	10.33	ME-SA	PanAsia-2 ^{PUN-10}
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Serotype: O WRLFMD Ref No: LAO/5/2012 Batch No: WRLFMD/2013/00014 Sender Ref: LAO 14/12R3 Location: Vientiane, Laos Date collected: 28/12/2012 Date received by WRLFMD: 17/06/2013 Date received for sequencing: 21/06/2013 Species: Cattle Material used: BTy1 19/06/2013 Region sequenced: VP1 RT-PCR primers: O-1C244F/EUR-2B52R O-1C272F/EUR-2B52R	Report date: 02/07/2013 Reported by: N.J. Knowles Checked by: D.P. King Topotype: ME-SA Genotype/strain: PanAsia Sequence filename: LAO12-05.SEQ Date sequence last updated: 02/07/2013 No. of Nt determined: 639 No. of ambiguities: 0 Gene length: 639 Total no. of comparisons: 3663 Min. no. of nt for comparison: 600 Total turn-around time: 15 days Sequencing time: 11 days
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2	O/LAO/2/2012	LAO12-02	639	639	0	100.00	0.00	ME-SA	PanAsia
3	O/LAO/3/2012	LAO12-03	639	639	0	100.00	0.00	ME-SA	PanAsia
4	O/LAO/2/2010	LAO10-02	639	638	0	99.84	0.16	ME-SA	PanAsia
5	O/LAO/4/2012	LAO12-04	639	638	0	99.84	0.16	ME-SA	PanAsia
6	O/VIT/7/2011	VIT11-07	639	638	0	99.84	0.16	ME-SA	PanAsia
7	O/VIT/12/2011	VIT11-12	639	637	0	99.69	0.31	ME-SA	PanAsia
8	O/VIT/4/2011	VIT11-04	639	637	0	99.69	0.31	ME-SA	PanAsia
9	O/VIT/8/2011	VIT11-08	639	637	0	99.69	0.31	ME-SA	PanAsia
10	O/VIT/9/2011	VIT11-09	639	637	0	99.69	0.31	ME-SA	PanAsia
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3	O/IRN/31/2009	IRN09-31	639	581	0	90.92	9.08	ME-SA	PanAsia-2 ^{FAR-09}
4	O/IRN/8/2005	IRN05-08	639	581	0	90.92	9.08	ME-SA	PanAsia-2
5	O/IRN/18/2010	IRN10-18	639	578	0	90.45	9.55	ME-SA	PanAsia-2 ^{BAL-09}
6	O/OMN/7/2001 (DQ164941)	OMN01-07	639	578	0	90.45	9.55	ME-SA	Ind-2001b
7	O/BHU/3/2009	BHU09-03	639	576	0	90.14	9.86	ME-SA	Ind-2001d
8	O/UAE/4/2008	UAE08-04	636	572	0	89.94	10.06	ME-SA	Ind-2001c
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nt, nucleotides

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Assembled with Report Generator v4.1

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Report on FMDV O in Laos in 2012

Batch: WRLFMD/2013/00014

◆ indicates viruses in this batch

Software: MEGA 5.2

Analysis

Phylogeny Reconstruction

Scope: All Selected Taxa

Statistical Method: Neighbor-joining

Phylogeny Test

Test of Phylogeny: Bootstrap method

No. of Bootstrap Replications: 1000

Substitution Model

Substitutions Type: Nucleotide

Model/Method: Kimura 2-parameter model

Substitutions to Include: d: Transitions + Transversions

Rates and Patterns

Rates among Sites: Uniform rates

Pattern among Lineages: Same (Homogeneous)

Data Subset to Use

Gaps/Missing Data Treatment: Pairwise deletion

Codons Included: 1st+2nd+3rd+Non-Coding

No. of Sites: 645

No Of Bootstrap Reps = 1000

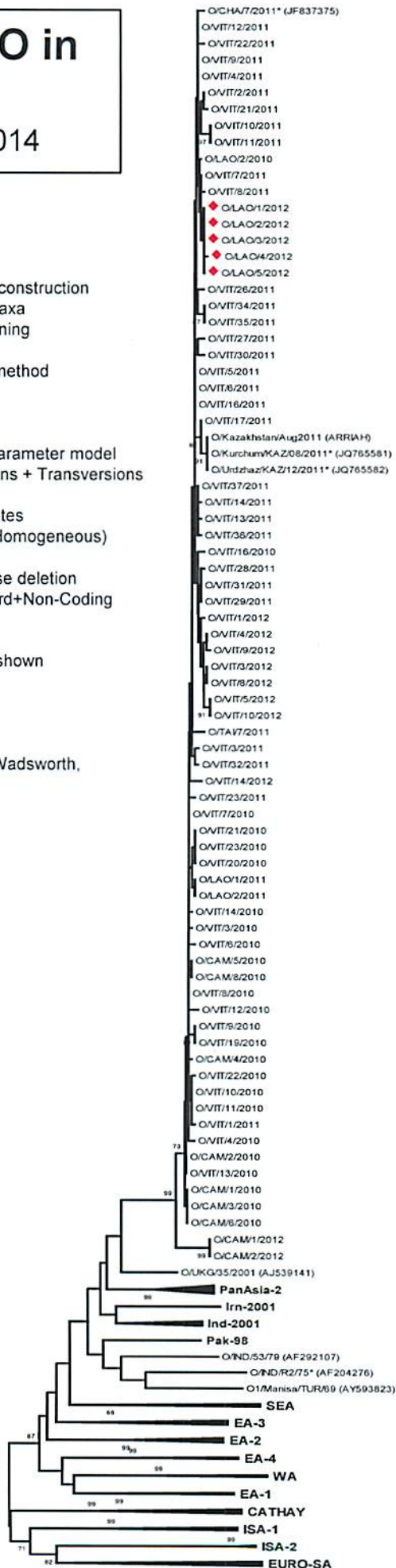
Only bootstrap values of 70% and above are shown

*, not a WRLFMD Ref. No.

N.J. Knowles, K. Bachanek-Bankowska & J. Wadsworth,
02 July 2013

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PanAsia

ME-SA