

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

Genotyping Report

Report date for this batch: 17-Dec-2015

FMDV type: O

Country: LAOS

Year: 2015

WRL BATCH: WRLFMD/2015/00034



The contents of this report are copyright and should not be reproduced without permission

© The Pirbright Institute

Genotyping Results

WRL Batch: WRLFMD/2015/00034

Batch: IAHB/2015/00637

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

Genotyping Report

Report Date for this Batch: 17 December 2015

FMDV type O

Country: Lao PDR

Period: 2015

No. of samples: 4

BATCH: WRLFMD/2015/00034



The contents of this report are copyright and should not be reproduced without permission

© The Pirbright Institute

FAO World Reference Laboratory for FMD Genotyping Report

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

Page 1 of 1

Serotype: O	Report date: 17/12/2015
WRLFMD Ref No: LAO/2/2015	Reported by: N.J. Knowles
Batch No: WRLFMD/2015/00034	Checked by: K. Bachanek-Bankowska
Sender Ref: LAO12/15R3B3	
Location: Naxaythong, Vientiane, Laos	Topotype: ME-SA
Date collected: 10/06/2015	Genotype/strain: Ind-2001d
Date received by WRLFMD: 26/11/2015	Sequence filename: LAO15-02.SEQ
Date received for sequencing: 09/12/2015	Date sequence last updated: 10/12/2015
Species: Not Known	No. of Nt determined: 639
Material used: BTy1 04/12/2015	No. of ambiguities: 0
Region sequenced: VP1	Gene length: 639
RT-PCR primers: O-1C244F/EUR-2B52R	Total no. of comparisons: 4191
O-1C272F/EUR-2B52R	Min. no. of nt for comparison: 600
	Total turn-around time: 21 days
	Sequencing time: 8 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/4/2015	LAO15-04	639	639	0	100.00	0.00	ME-SA	Ind-2001d
2	O/LAO/3/2015	LAO15-03	639	638	0	99.84	0.16	ME-SA	Ind-2001d
3	O/LAO/5/2015	LAO15-05	639	638	0	99.84	0.16	ME-SA	Ind-2001d
4	O/IND189/2013* (KM264361)	IND13-AE	639	630	0	98.59	1.41	ME-SA	Ind-2001d
5	O/IND205/2013* (KM264362)	IND13-AF	639	629	0	98.44	1.56	ME-SA	Ind-2001d
6	O/UAE/1/2014 (KM921877)	UAE14-01	639	629	0	98.44	1.56	ME-SA	Ind-2001d
7	O/UAE/2/2014 (KM921878)	UAE14-02	639	629	0	98.44	1.56	ME-SA	Ind-2001d
8	O/IND219/2013* (KM264363)	IND13-AG	639	628	0	98.28	1.72	ME-SA	Ind-2001d
9	O/NEP/3/2013 (KM921853)	NEP13-03	639	628	0	98.28	1.72	ME-SA	Ind-2001d
10	O/BAR/5/2015	BAR15-05	639	627	0	98.12	1.88	ME-SA	Ind-2001d
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/BHU/3/2009 (KM921814)	BHU09-03	639	610	0	95.46	4.54	ME-SA	Ind-2001d
2	O/OMN/7/2001 (DQ164941)	OMN01-07	639	593	0	92.80	7.20	ME-SA	Ind-2001b
3	O/KUW/3/97 (DQ164904)	KUW97-03	639	592	0	92.64	7.36	ME-SA	Ind-2001a
4	O/UAE/4/2008 (KM921876)	UAE08-04	636	579	0	91.04	8.96	ME-SA	Ind-2001c
5	O/UKG/35/2001 (AJ539141)	UKG01-35	639	579	0	90.61	9.39	ME-SA	PanAsia
6	O/IRN/31/2009	IRN09-31	639	576	0	90.14	9.86	ME-SA	PanAsia-2 ^{FAR-09}
7	O/IRN/18/2010	IRN10-18	639	571	0	89.36	10.64	ME-SA	PanAsia-2 ^{BAL-09}
8	O/IRN/8/2005	IRN05-08	639	571	0	89.36	10.64	ME-SA	PanAsia-2
9	O/TUR/257/2008* (FMDI)	TUR08-AD	639	570	0	89.20	10.80	ME-SA	PanAsia-2 ^{TER-08}
10	O/TUR/264/2009* (FMDI)	TUR09-AK	639	569	0	89.05	10.95	ME-SA	PanAsia-2 ^{SAN-09}

nt, nucleotides

*, not a WRLFMD reference number

Assembled with Report Generator v4.3

© The Pirbright Institute (not to be reproduced without permission)

FAO World Reference Laboratory for FMD Genotyping Report

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

Page 1 of 1

Serotype: O	Report date: 17/12/2015
WRLFMD Ref No: LAO/3/2015	Reported by: N.J. Knowles
Batch No: WRLFMD/2015/00034	Checked by: K. Bachanek-Bankowska
Sender Ref: LAO13/15R3B3	
Location: Naxaythong, Vientiane, Laos	Topotype: ME-SA
Date collected: 10/06/2015	Genotype/strain: Ind-2001d
Date received by WRLFMD: 26/11/2015	Sequence filename: LAO15-03.SEQ
Date received for sequencing: 11/12/2015	Date sequence last updated: 15/12/2015
Species: Not Known	No. of Nt determined: 639
Material used: BTy1 04/12/2015	No. of ambiguities: 0
Region sequenced: VP1	Gene length: 639
RT-PCR primers: O-1C244F/EUR-2B52R	Total no. of comparisons: 4191
O-1C272F/EUR-2B52R	Min. no. of nt for comparison: 600
	Total turn-around time: 21 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/2/2015	LAO15-02	639	638	0	99.84	0.16	ME-SA	Ind-2001d
2	O/LAO/4/2015	LAO15-04	639	638	0	99.84	0.16	ME-SA	Ind-2001d
3	O/LAO/5/2015	LAO15-05	639	637	0	99.69	0.31	ME-SA	Ind-2001d
4	O/IND189/2013* (KM264361)	IND13-AE	639	629	0	98.44	1.56	ME-SA	Ind-2001d
5	O/IND205/2013* (KM264362)	IND13-AF	639	628	0	98.28	1.72	ME-SA	Ind-2001d
6	O/UAE/1/2014 (KM921877)	UAE14-01	639	628	0	98.28	1.72	ME-SA	Ind-2001d
7	O/UAE/2/2014 (KM921878)	UAE14-02	639	628	0	98.28	1.72	ME-SA	Ind-2001d
8	O/IND219/2013* (KM264363)	IND13-AG	639	627	0	98.12	1.88	ME-SA	Ind-2001d
9	O/NEP/3/2013 (KM921853)	NEP13-03	639	627	0	98.12	1.88	ME-SA	Ind-2001d
10	O/BAR/5/2015	BAR15-05	639	626	0	97.97	2.03	ME-SA	Ind-2001d
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/BHU/3/2009 (KM921814)	BHU09-03	639	609	0	95.31	4.69	ME-SA	Ind-2001d
2	O/OMN/7/2001 (DQ164941)	OMN01-07	639	592	0	92.64	7.36	ME-SA	Ind-2001b
3	O/KUW/3/97 (DQ164904)	KUW97-03	639	591	0	92.49	7.51	ME-SA	Ind-2001a
4	O/UAE/4/2008 (KM921876)	UAE08-04	636	578	0	90.88	9.12	ME-SA	Ind-2001c
5	O/UKG/35/2001 (AJ539141)	UKG01-35	639	578	0	90.45	9.55	ME-SA	PanAsia
6	O/IRN/31/2009	IRN09-31	639	575	0	89.98	10.02	ME-SA	PanAsia-2 ^{FAR-09}
7	O/IRN/18/2010	IRN10-18	639	570	0	89.20	10.80	ME-SA	PanAsia-2 ^{BAL-09}
8	O/IRN/8/2005	IRN05-08	639	570	0	89.20	10.80	ME-SA	PanAsia-2
9	O/TUR/257/2008* (FMDI)	TUR08-AD	639	569	0	89.05	10.95	ME-SA	PanAsia-2 ^{TER-08}
10	O/TUR/264/2009* (FMDI)	TUR09-AK	639	568	0	88.89	11.11	ME-SA	PanAsia-2 ^{SAN-09}

nt, nucleotides

*, not a WRLFMD reference number

Assembled with Report Generator v4.3

© The Pirbright Institute (not to be reproduced without permission)

FAO World Reference Laboratory for FMD Genotyping Report

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

Page 1 of 1

Serotype: O	Report date: 17/12/2015
WRLFMD Ref No: LAO/4/2015	Reported by: N.J. Knowles
Batch No: WRLFMD/2015/00034	Checked by: K. Bachanek-Bankowska
Sender Ref: LAO14/15R3B3	
Location: Naxaythong, Vientiane, Laos	Topotype: ME-SA
Date collected: 10/06/2015	Genotype/strain: Ind-2001d
Date received by WRLFMD: 26/11/2015	Sequence filename: LAO15-04.SEQ
Date received for sequencing: 09/12/2015	Date sequence last updated: 10/12/2015
Species: Not Known	No. of Nt determined: 639
Material used: BTy1 04/12/2015	No. of ambiguities: 0
Region sequenced: VP1	Gene length: 639
RT-PCR primers: O-1C244F/EUR-2B52R	Total no. of comparisons: 4191
O-1C272F/EUR-2B52R	Min. no. of nt for comparison: 600
	Total turn-around time: 21 days
	Sequencing time: 8 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/2/2015	LAO15-02	639	639	0	100.00	0.00	ME-SA	Ind-2001d
2	O/LAO/3/2015	LAO15-03	639	638	0	99.84	0.16	ME-SA	Ind-2001d
3	O/LAO/5/2015	LAO15-05	639	638	0	99.84	0.16	ME-SA	Ind-2001d
4	O/IND189/2013* (KM264361)	IND13-AE	639	630	0	98.59	1.41	ME-SA	Ind-2001d
5	O/IND205/2013* (KM264362)	IND13-AF	639	629	0	98.44	1.56	ME-SA	Ind-2001d
6	O/UAE/1/2014 (KM921877)	UAE14-01	639	629	0	98.44	1.56	ME-SA	Ind-2001d
7	O/UAE/2/2014 (KM921878)	UAE14-02	639	629	0	98.44	1.56	ME-SA	Ind-2001d
8	O/IND219/2013* (KM264363)	IND13-AG	639	628	0	98.28	1.72	ME-SA	Ind-2001d
9	O/NEP/3/2013 (KM921853)	NEP13-03	639	628	0	98.28	1.72	ME-SA	Ind-2001d
10	O/BAR/5/2015	BAR15-05	639	627	0	98.12	1.88	ME-SA	Ind-2001d
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/BHU/3/2009 (KM921814)	BHU09-03	639	610	0	95.46	4.54	ME-SA	Ind-2001d
2	O/OMN/7/2001 (DQ164941)	OMN01-07	639	593	0	92.80	7.20	ME-SA	Ind-2001b
3	O/KUW/3/97 (DQ164904)	KUW97-03	639	592	0	92.64	7.36	ME-SA	Ind-2001a
4	O/UAE/4/2008 (KM921876)	UAE08-04	636	579	0	91.04	8.96	ME-SA	Ind-2001c
5	O/UKG/35/2001 (AJ539141)	UKG01-35	639	579	0	90.61	9.39	ME-SA	PanAsia
6	O/IRN/31/2009	IRN09-31	639	576	0	90.14	9.86	ME-SA	PanAsia-2 ^{FAR-09}
7	O/IRN/18/2010	IRN10-18	639	571	0	89.36	10.64	ME-SA	PanAsia-2 ^{BAL-09}
8	O/IRN/8/2005	IRN05-08	639	571	0	89.36	10.64	ME-SA	PanAsia-2
9	O/TUR/257/2008* (FMDI)	TUR08-AD	639	570	0	89.20	10.80	ME-SA	PanAsia-2 ^{TER-08}
10	O/TUR/264/2009* (FMDI)	TUR09-AK	639	569	0	89.05	10.95	ME-SA	PanAsia-2 ^{SAN-09}

nt, nucleotides

*, not a WRLFMD reference number

Assembled with Report Generator v4.3

© The Pirbright Institute (not to be reproduced without permission)

FAO World Reference Laboratory for FMD Genotyping Report

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

Page 1 of 1

Serotype: O	Report date: 17/12/2015
WRLFMD Ref No: LAO/5/2015	Reported by: N.J. Knowles
Batch No: WRLFMD/2015/00034	Checked by: K. Bachanek-Bankowska
Sender Ref: LAO15/15R3B3	
Location: Naxaythong, Vientiane, Laos	Topotype: ME-SA
Date collected: 10/06/2015	Genotype/strain: Ind-2001d
Date received by WRLFMD: 26/11/2015	Sequence filename: LAO15-05.SEQ
Date received for sequencing: 09/12/2015	Date sequence last updated: 10/12/2015
Species: Not Known	No. of Nt determined: 639
Material used: BTy1 04/12/2015	No. of ambiguities: 0
Region sequenced: VP1	Gene length: 639
RT-PCR primers: O-1C244F/EUR-2B52R	Total no. of comparisons: 4191
O-1C272F/EUR-2B52R	Min. no. of nt for comparison: 600
	Total turn-around time: 21 days
	Sequencing time: 8 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/2/2015	LAO15-02	639	638	0	99.84	0.16	ME-SA	Ind-2001d
2	O/LAO/4/2015	LAO15-04	639	638	0	99.84	0.16	ME-SA	Ind-2001d
3	O/LAO/3/2015	LAO15-03	639	637	0	99.69	0.31	ME-SA	Ind-2001d
4	O/IND189/2013* (KM264361)	IND13-AE	639	629	0	98.44	1.56	ME-SA	Ind-2001d
5	O/IND205/2013* (KM264362)	IND13-AF	639	628	0	98.28	1.72	ME-SA	Ind-2001d
6	O/UAE/1/2014 (KM921877)	UAE14-01	639	628	0	98.28	1.72	ME-SA	Ind-2001d
7	O/UAE/2/2014 (KM921878)	UAE14-02	639	628	0	98.28	1.72	ME-SA	Ind-2001d
8	O/IND219/2013* (KM264363)	IND13-AG	639	627	0	98.12	1.88	ME-SA	Ind-2001d
9	O/NEP/3/2013 (KM921853)	NEP13-03	639	627	0	98.12	1.88	ME-SA	Ind-2001d
10	O/BAR/5/2015	BAR15-05	639	626	0	97.97	2.03	ME-SA	Ind-2001d
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/BHU/3/2009 (KM921814)	BHU09-03	639	609	0	95.31	4.69	ME-SA	Ind-2001d
2	O/OMN/7/2001 (DQ164941)	OMN01-07	639	593	0	92.80	7.20	ME-SA	Ind-2001b
3	O/KUW/3/97 (DQ164904)	KUW97-03	639	592	0	92.64	7.36	ME-SA	Ind-2001a
4	O/UAE/4/2008 (KM921876)	UAE08-04	636	579	0	91.04	8.96	ME-SA	Ind-2001c
5	O/UKG/35/2001 (AJ539141)	UKG01-35	639	579	0	90.61	9.39	ME-SA	PanAsia
6	O/IRN/31/2009	IRN09-31	639	575	0	89.98	10.02	ME-SA	PanAsia-2 ^{FAR-09}
7	O/IRN/8/2005	IRN05-08	639	571	0	89.36	10.64	ME-SA	PanAsia-2
8	O/IRN/18/2010	IRN10-18	639	570	0	89.20	10.80	ME-SA	PanAsia-2 ^{BAL-09}
9	O/TUR/257/2008* (FMDI)	TUR08-AD	639	569	0	89.05	10.95	ME-SA	PanAsia-2 ^{TER-08}
10	O/TUR/264/2009* (FMDI)	TUR09-AK	639	568	0	88.89	11.11	ME-SA	PanAsia-2 ^{SAN-09}

nt, nucleotides

*, not a WRLFMD reference number

Assembled with Report Generator v4.3

© The Pirbright Institute (not to be reproduced without permission)

Report on FMDV O in Laos in 2015

Batch: WRLFMD/2015/00034

◆ indicates viruses in this batch

Software: MEGA 6.06

Analysis

----- Phylogeny Reconstruction

----- All Selected Taxa

----- Neighbor-joining

Phylogeny Test

----- Bootstrap method

----- 1000

Substitution Model

----- Nucleotide

----- Kimura 2-parameter model

----- d: Transitions + Transversions

Rates and Patterns

----- Uniform rates

----- Same (Homogeneous)

Data Subset to Use

----- Pairwise deletion

----- 1st+2nd+3rd+Non-Coding

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 & K. Bachanek-Bankowska,
17 December 2015

© The Pirbright Institute

(not to be reproduced without permission)

