

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

Genotyping Report

Report Date for this Batch: 4 June 2013

FMDV type A

Country: Vietnam

Period: 2013

No. of samples: 5

BATCH: WRLFMD/2013/00011



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FAO World Reference Laboratory for FMD Genotyping Report

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

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Serotype: A	Report date: 04/06/2013
WRLFMD Ref No: VIT/1/2013	Reported by: N.J. Knowles
Batch No: WRLFMD/2013/00011	Checked by: D.P. King
Sender Ref: 03959-1	
Location: Dong Nai province, Vietnam	Topotype: ASIA
Date collected: 16/03/2013	Genotype/strain: Sea-97
Date received by WRLFMD: 24/04/2013	Sequence filename: VIT13-01.SEQ
Date received for sequencing: 10/05/2013	Date sequence last updated: 16/05/2013
Species: Cattle	No. of Nt determined: 636
Material used: BTy1 01/05/2013	No. of ambiguities: 0
Region sequenced: VP1	Gene length: 636
RT-PCR primers: A-1C562F/EUR-2B52R	Total no. of comparisons: 1616
A-1C612F/EUR-2B52R	Min. no. of nt for comparison: 600
	Total turn-around time: 41 days
	Sequencing time: 25 days
Comments:	

Most Closely Related Viruses									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	A/VIT/4/2013	VIT13-04	636	636	0	100.00	0.00	ASIA	Sea-97
2	A/VIT/5/2013	VIT13-05	636	636	0	100.00	0.00	ASIA	Sea-97
3	A/VIT/6/2013	VIT13-06	636	636	0	100.00	0.00	ASIA	Sea-97
4	A/VIT/3/2013	VIT13-03	636	635	0	99.84	0.16	ASIA	Sea-97
5	A/THA 66-1/10* (TRRL)	TAI10-AA	633	616	0	97.31	2.69	ASIA	Sea-97
6	A/MAY/4/2011	MAY11-04	633	615	0	97.16	2.84	ASIA	Sea-97
7	A/TAI/7/2010	TAI10-07	633	615	0	97.16	2.84	ASIA	Sea-97
8	A/TAI/8/2010	TAI10-08	633	615	0	97.16	2.84	ASIA	Sea-97
9	A/THA 67-3/10* (TRRL)	TAI10-AB	633	615	0	97.16	2.84	ASIA	Sea-97
10	A/THA 69-6/10* (TRRL)	TAI10-AC	633	615	0	97.16	2.84	ASIA	Sea-97

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	A/TAI/7/2003 (HQ116312)	TAI03-07	633	595	0	94.00	6.00	ASIA	Sea-97
2	A/TAI/2/97 (EF208778)	TAI97-02	633	575	0	90.84	9.16	ASIA	Sea-97
3	A/TAI/118/87* (EF208777)	TAI87-AD	633	553	0	87.36	12.64	ASIA	Thai-87
4	A22/IRQ/64 (AY593763)	IRQ64--A	636	527	0	82.86	17.14	ASIA	A22
5	A/IRN/2/87 (EF208770)	IRN87-02	633	521	0	82.31	17.69	ASIA	Iran-87
6	A/IRN/78/2009	IRN09-78	636	518	0	81.45	18.55	ASIA	Iran-05 ^{FAR-09}
7	A/BAR/6/2008	BAR08-06	636	517	0	81.29	18.71	ASIA	Iran-05 ^{BAR-08}
8	A/IRN/1/96 (EF208771)	IRN96-01	635	515	1	81.10	18.90	ASIA	Iran-96
9	A15/Bangkok/TAI/60 (AY593755)	TAI60--D	636	515	0	80.97	19.03	ASIA	A15
10	A/GHA/16/73	GHA73-16	633	512	0	80.88	19.12	AFRICA	G-VI

nt, nucleotides

*, not a WRLFMD reference number

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Serotype: A	Report date: 04/06/2013
WRLFMD Ref No: VIT/3/2013	Reported by: N.J. Knowles
Batch No: WRLFMD/2013/00011	Checked by: D.P. King
Sender Ref: 03959-3	
Location: Ha Tinh province, Vietnam	Topotype: ASIA
Date collected: 28/03/2013	Genotype/strain: Sea-97
Date received by WRLFMD: 24/04/2013	Sequence filename: VIT13-03.SEQ
Date received for sequencing: 10/05/2013	Date sequence last updated: 16/05/2013
Species: Cattle	No. of Nt determined: 636
Material used: BTy1 01/05/2013	No. of ambiguities: 0
Region sequenced: VP1	Gene length: 636
RT-PCR primers: A-1C562F/EUR-2B52R	Total no. of comparisons: 1616
A-1C612F/EUR-2B52R	Min. no. of nt for comparison: 600
	Total turn-around time: 41 days
	Sequencing time: 25 days
Comments:	

Most Closely Related Viruses									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	A/VIT/1/2013	VIT13-01	636	635	0	99.84	0.16	ASIA	Sea-97
2	A/VIT/4/2013	VIT13-04	636	635	0	99.84	0.16	ASIA	Sea-97
3	A/VIT/5/2013	VIT13-05	636	635	0	99.84	0.16	ASIA	Sea-97
4	A/VIT/6/2013	VIT13-06	636	635	0	99.84	0.16	ASIA	Sea-97
5	A/THA 66-1/10* (TRRL)	TAI10-AA	633	617	0	97.47	2.53	ASIA	Sea-97
6	A/MAY/4/2011	MAY11-04	633	616	0	97.31	2.69	ASIA	Sea-97
7	A/TAI/7/2010	TAI10-07	633	616	0	97.31	2.69	ASIA	Sea-97
8	A/TAI/8/2010	TAI10-08	633	616	0	97.31	2.69	ASIA	Sea-97
9	A/THA 67-3/10* (TRRL)	TAI10-AB	633	616	0	97.31	2.69	ASIA	Sea-97
10	A/THA 69-6/10* (TRRL)	TAI10-AC	633	616	0	97.31	2.69	ASIA	Sea-97
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	A/TAI/7/2003 (HQ116312)	TAI03-07	633	596	0	94.15	5.85	ASIA	Sea-97
2	A/TAI/2/97 (EF208778)	TAI97-02	633	576	0	91.00	9.00	ASIA	Sea-97
3	A/TAI/118/87* (EF208777)	TAI87-AD	633	554	0	87.52	12.48	ASIA	Thai-87
4	A22/IRQ/64 (AY593763)	IRQ64--A	636	528	0	83.02	16.98	ASIA	A ₂₂
5	A/IRN/2/87 (EF208770)	IRN87-02	633	522	0	82.46	17.54	ASIA	Iran-87
6	A/IRN/78/2009	IRN09-78	636	519	0	81.60	18.40	ASIA	Iran-05 ^{FAR-09}
7	A/BAR/6/2008	BAR08-06	636	518	0	81.45	18.55	ASIA	Iran-05 ^{BAR-08}
8	A/IRN/1/96 (EF208771)	IRN96-01	635	516	1	81.26	18.74	ASIA	Iran-96
9	A15/Bangkok/TAI/60 (AY593755)	TAI60--D	636	516	0	81.13	18.87	ASIA	A15
10	A/GHA/16/73	GHA73-16	633	512	0	80.88	19.12	AFRICA	G-VI

nt, nucleotides

*, not a WRLFMD reference number

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Serotype: A	Report date: 04/06/2013
WRLFMD Ref No: VIT/4/2013	Reported by: N.J. Knowles
Batch No: WRLFMD/2013/00011	Checked by: D.P. King
Sender Ref: 04093-HD1	
Location: Ha Tinh province, Vietnam	Topotype: ASIA
Date collected: 16/03/2013	Genotype/strain: Sea-97
Date received by WRLFMD: 24/04/2013	Sequence filename: VIT13-04.SEQ
Date received for sequencing: 10/05/2013	Date sequence last updated: 16/05/2013
Species: Cattle	No. of Nt determined: 636
Material used: BTy1 02/05/2013	No. of ambiguities: 0
Region sequenced: VP1	Gene length: 636
RT-PCR primers: A-1C562F/EUR-2B52R	Total no. of comparisons: 1616
A-1C612F/EUR-2B52R	Min. no. of nt for comparison: 600
	Total turn-around time: 41 days
	Sequencing time: 25 days
Comments:	

Most Closely Related Viruses									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	A/VIT/1/2013	VIT13-01	636	636	0	100.00	0.00	ASIA	Sea-97
2	A/VIT/5/2013	VIT13-05	636	636	0	100.00	0.00	ASIA	Sea-97
3	A/VIT/6/2013	VIT13-06	636	636	0	100.00	0.00	ASIA	Sea-97
4	A/VIT/3/2013	VIT13-03	636	635	0	99.84	0.16	ASIA	Sea-97
5	A/THA 66-1/10* (TRRL)	TAI10-AA	633	616	0	97.31	2.69	ASIA	Sea-97
6	A/MAY/4/2011	MAY11-04	633	615	0	97.16	2.84	ASIA	Sea-97
7	A/TAI/7/2010	TAI10-07	633	615	0	97.16	2.84	ASIA	Sea-97
8	A/TAI/8/2010	TAI10-08	633	615	0	97.16	2.84	ASIA	Sea-97
9	A/THA 67-3/10* (TRRL)	TAI10-AB	633	615	0	97.16	2.84	ASIA	Sea-97
10	A/THA 69-6/10* (TRRL)	TAI10-AC	633	615	0	97.16	2.84	ASIA	Sea-97
Most Closely Related Reference Viruses									
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Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	A/TAI/7/2003 (HQ116312)	TAI03-07	633	595	0	94.00	6.00	ASIA	Sea-97
2	A/TAI/2/97 (EF208778)	TAI97-02	633	575	0	90.84	9.16	ASIA	Sea-97
3	A/TAI/118/87* (EF208777)	TAI87-AD	633	553	0	87.36	12.64	ASIA	Thai-87
4	A22/IRQ/64 (AY593763)	IRQ64--A	636	527	0	82.86	17.14	ASIA	A ₂₂
5	A/IRN/2/87 (EF208770)	IRN87-02	633	521	0	82.31	17.69	ASIA	Iran-87
6	A/IRN/78/2009	IRN09-78	636	518	0	81.45	18.55	ASIA	Iran-05 ^{FAR-09}
7	A/BAR/6/2008	BAR08-06	636	517	0	81.29	18.71	ASIA	Iran-05 ^{BAR-08}
8	A/IRN/1/96 (EF208771)	IRN96-01	635	515	1	81.10	18.90	ASIA	Iran-96
9	A15/Bangkok/TAI/60 (AY593755)	TAI60--D	636	515	0	80.97	19.03	ASIA	A15
10	A/GHA/16/73	GHA73-16	633	512	0	80.88	19.12	AFRICA	G-VI

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Serotype: A	Report date: 04/06/2013
WRLFMD Ref No: VIT/5/2013	Reported by: N.J. Knowles
Batch No: WRLFMD/2013/00011	Checked by: D.P. King
Sender Ref: 04093-HD2	
Location: Ha Tinh province, Vietnam	Topotype: ASIA
Date collected: 02/04/2013	Genotype/strain: Sea-97
Date received by WRLFMD: 24/04/2013	Sequence filename: VIT13-05.SEQ
Date received for sequencing: 10/05/2013	Date sequence last updated: 16/05/2013
Species: Water Buffalo	No. of Nt determined: 636
Material used: BTy1 02/05/2013	No. of ambiguities: 0
Region sequenced: VP1	Gene length: 636
RT-PCR primers: A-1C562F/EUR-2B52R	Total no. of comparisons: 1616
A-1C612F/EUR-2B52R	Min. no. of nt for comparison: 600
	Total turn-around time: 41 days
	Sequencing time: 25 days
Comments:	

Most Closely Related Viruses									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	A/VIT/1/2013	VIT13-01	636	636	0	100.00	0.00	ASIA	Sea-97
2	A/VIT/4/2013	VIT13-04	636	636	0	100.00	0.00	ASIA	Sea-97
3	A/VIT/6/2013	VIT13-06	636	636	0	100.00	0.00	ASIA	Sea-97
4	A/VIT/3/2013	VIT13-03	636	635	0	99.84	0.16	ASIA	Sea-97
5	A/THA 66-1/10* (TRRL)	TAI10-AA	633	616	0	97.31	2.69	ASIA	Sea-97
6	A/MAY/4/2011	MAY11-04	633	615	0	97.16	2.84	ASIA	Sea-97
7	A/TAI/7/2010	TAI10-07	633	615	0	97.16	2.84	ASIA	Sea-97
8	A/TAI/8/2010	TAI10-08	633	615	0	97.16	2.84	ASIA	Sea-97
9	A/THA 67-3/10* (TRRL)	TAI10-AB	633	615	0	97.16	2.84	ASIA	Sea-97
10	A/THA 69-6/10* (TRRL)	TAI10-AC	633	615	0	97.16	2.84	ASIA	Sea-97
Most Closely Related Reference Viruses									
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1	A/TAI/7/2003 (HQ116312)	TAI03-07	633	595	0	94.00	6.00	ASIA	Sea-97
2	A/TAI/2/97 (EF208778)	TAI97-02	633	575	0	90.84	9.16	ASIA	Sea-97
3	A/TAI/118/87* (EF208777)	TAI87-AD	633	553	0	87.36	12.64	ASIA	Thai-87
4	A22/IRQ/64 (AY593763)	IRQ64--A	636	527	0	82.86	17.14	ASIA	A ₂₂
5	A/IRN/2/87 (EF208770)	IRN87-02	633	521	0	82.31	17.69	ASIA	Iran-87
6	A/IRN/78/2009	IRN09-78	636	518	0	81.45	18.55	ASIA	Iran-05 ^{FAR-09}
7	A/BAR/6/2008	BAR08-06	636	517	0	81.29	18.71	ASIA	Iran-05 ^{BAR-08}
8	A/IRN/1/96 (EF208771)	IRN96-01	635	515	1	81.10	18.90	ASIA	Iran-96
9	A15/Bangkok/TAI/60 (AY593755)	TAI60--D	636	515	0	80.97	19.03	ASIA	A15
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Serotype: A	Report date: 04/06/2013
WRLFMD Ref No: VIT/6/2013	Reported by: N.J. Knowles
Batch No: WRLFMD/2013/00011	Checked by: D.P. King
Sender Ref: 04093-BM3	
Location: Ha Tinh province, Vietnam	Topotype: ASIA
Date collected: 02/04/2013	Genotype/strain: Sea-97
Date received by WRLFMD: 24/04/2013	Sequence filename: VIT13-06.SEQ
Date received for sequencing: 10/05/2013	Date sequence last updated: 16/05/2013
Species: Water Buffalo	No. of Nt determined: 636
Material used: Epi susp & BTy1 01/05/2013	No. of ambiguities: 0
Region sequenced: VP1	Gene length: 636
RT-PCR primers: A-1C562F/EUR-2B52R	Total no. of comparisons: 1616
A-1C612F/EUR-2B52R	Min. no. of nt for comparison: 600
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1	A/VIT/1/2013	VIT13-01	636	636	0	100.00	0.00	ASIA	Sea-97
2	A/VIT/4/2013	VIT13-04	636	636	0	100.00	0.00	ASIA	Sea-97
3	A/VIT/5/2013	VIT13-05	636	636	0	100.00	0.00	ASIA	Sea-97
4	A/VIT/3/2013	VIT13-03	636	635	0	99.84	0.16	ASIA	Sea-97
5	A/THA 66-1/10* (TRRL)	TAI10-AA	633	616	0	97.31	2.69	ASIA	Sea-97
6	A/MAY/4/2011	MAY11-04	633	615	0	97.16	2.84	ASIA	Sea-97
7	A/TAI/7/2010	TAI10-07	633	615	0	97.16	2.84	ASIA	Sea-97
8	A/TAI/8/2010	TAI10-08	633	615	0	97.16	2.84	ASIA	Sea-97
9	A/THA 67-3/10* (TRRL)	TAI10-AB	633	615	0	97.16	2.84	ASIA	Sea-97
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2	A/TAI/2/97 (EF208778)	TAI97-02	633	575	0	90.84	9.16	ASIA	Sea-97
3	A/TAI/118/87* (EF208777)	TAI87-AD	633	553	0	87.36	12.64	ASIA	Thai-87
4	A22/IRQ/64 (AY593763)	IRQ64--A	636	527	0	82.86	17.14	ASIA	A ₂₂
5	A/IRN/2/87 (EF208770)	IRN87-02	633	521	0	82.31	17.69	ASIA	Iran-87
6	A/IRN/78/2009	IRN09-78	636	518	0	81.45	18.55	ASIA	Iran-05 ^{FAR-09}
7	A/BAR/6/2008	BAR08-06	636	517	0	81.29	18.71	ASIA	Iran-05 ^{BAR-08}
8	A/IRN/1/96 (EF208771)	IRN96-01	635	515	1	81.10	18.90	ASIA	Iran-96
9	A15/Bangkok/TAI/60 (AY593755)	TAI60--D	636	515	0	80.97	19.03	ASIA	A15
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nt, nucleotides

*, not a WRLFMD reference number

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Report on FMDV A in Vietnam in 2013

Batch: WRLFMD/2013/00011

◆ indicates viruses in this batch

Software: MEGA 5.2

Analysis

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 : 639

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,
04 June 2013

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Sea-97

ASIA

0.02