

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

Genotyping Report

Report Date for this Batch: 15 February 2016

FMDV type Asia 1

Country: Iran

Period: 2015

No. of samples: 3

BATCH: WRLFMD/2015/00031



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: ASIA1	Report date: 13/02/2016
WRLFMD Ref No: IRN/1/2015	Reported by: N.J. Knowles
Batch No: WRLFMD/2015/00031	Checked by: D.P. King
Sender Ref: IR-94-01	
Location: Semnan, Iran	Topotype: ASIA
Date collected: 24/04/2015	Genotype/strain: Sindh-08
Date received by WRLFMD: 20/11/2015	Sequence filename: IRN15-01.SEQ
Date received for sequencing: 02/12/2015	Date sequence last updated: 04/12/2015
Species: Cattle	No. of Nt determined: 631
Material used: BTy1 24/11/2015	No. of ambiguities: 2
Region sequenced: VP1	Gene length: 633
RT-PCR primers: As1-1C530F/EUR-2B52R	Total no. of comparisons: 581
As1-1C613F/EUR-2B52R	Min. no. of nt for comparison: 600
	Total turn-around time: 85 days
	Sequencing time: 73 days
Comments:	

Most Closely Related Viruses									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	Asia1/TUR/12/2015	TUR15-12	631	627	0	99.37	0.63	ASIA	Sindh-08
2	Asia1/TUR/2/2015	TUR15-02	631	627	0	99.37	0.63	ASIA	Sindh-08
3	Asia1/TUR/7/2015	TUR15-07	631	627	0	99.37	0.63	ASIA	Sindh-08
4	Asia1/TUR/9/2015	TUR15-09	631	626	0	99.21	0.79	ASIA	Sindh-08
5	Asia1/IRN/2/2015	IRN15-02	631	625	0	99.05	0.95	ASIA	Sindh-08
6	Asia1/PAK/1/2015	PAK15-01	631	625	0	99.05	0.95	ASIA	Sindh-08
7	Asia1/TUR/18/2015	TUR15-18	631	624	0	98.89	1.11	ASIA	Sindh-08
8	Asia1/IRN/20/2015	IRN15-20	631	623	0	98.73	1.27	ASIA	Sindh-08
9	Asia1/PAK/19/2014	PAK14-19	631	620	0	98.26	1.74	ASIA	Sindh-08
10	Asia1/PAK/20/2014	PAK14-20	631	619	0	98.10	1.90	ASIA	Sindh-08
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	Asia1/PAK/8/2008	PAK08-08	631	595	0	94.29	5.71	ASIA	Sindh-08
2	Asia1/AFG/1/2001 (DQ121109)	AFG01-01	631	569	0	90.17	9.83	ASIA	unnamed
3	Asia1/IND/762/2003* (DQ101240)	IND03-AB	631	537	0	85.10	14.90	ASIA	Group III
4	Asia1/IND/63/72* (AY304994)	IND72C63	628	529	0	84.24	15.76	ASIA	unnamed
5	Asia1/IND/18/80 (DQ121116)	IND80-18	631	527	0	83.52	16.48	ASIA	unnamed
6	Asia1/IND/14/95* (AF390678)	IND95-AA	631	526	0	83.36	16.64	ASIA	unnamed
7	Asia1/Shamir/ISR/89	ISR89--A	631	525	0	83.20	16.80	ASIA	unnamed
8	Asia1/HKN/19/74 (FJ785230)	HKN74-19	631	521	0	82.57	17.43	ASIA	unnamed
9	Asia1/IRN/10/2004 (DQ121119)	IRN04-10	631	521	0	82.57	17.43	ASIA	unnamed
10	Asia1/YNBS/CHA/58 (AY390432)	CHA58-AA	631	521	0	82.57	17.43	ASIA	unnamed

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: ASIA1	Report date: 13/02/2016
WRLFMD Ref No: IRN/2/2015	Reported by: N.J. Knowles
Batch No: WRLFMD/2015/00031	Checked by: D.P. King
Sender Ref: IR-94-02	
Location: Kermanshah, Iran	Topotype: ASIA
Date collected: 28/04/2015	Genotype/strain: Sindh-08
Date received by WRLFMD: 20/11/2015	Sequence filename: IRN15-02.SEQ
Date received for sequencing: 02/12/2015	Date sequence last updated: 04/12/2015
Species: Cattle	No. of Nt determined: 633
Material used: BTy1 24/11/2015	No. of ambiguities: 0
Region sequenced: VP1	Gene length: 633
RT-PCR primers: As1-1C530F/EUR-2B52R	Total no. of comparisons: 581
As1-1C613F/EUR-2B52R	Min. no. of nt for comparison: 600
	Total turn-around time: 85 days
	Sequencing time: 73 days
Comments:	

Most Closely Related Viruses									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	Asia1/IRN/1/2015	IRN15-01	631	625	2	99.05	0.95	ASIA	Sindh-08
2	Asia1/TUR/12/2015	TUR15-12	633	627	0	99.05	0.95	ASIA	Sindh-08
3	Asia1/TUR/2/2015	TUR15-02	633	627	0	99.05	0.95	ASIA	Sindh-08
4	Asia1/TUR/7/2015	TUR15-07	633	627	0	99.05	0.95	ASIA	Sindh-08
5	Asia1/TUR/9/2015	TUR15-09	633	626	0	98.89	1.11	ASIA	Sindh-08
6	Asia1/PAK/1/2015	PAK15-01	633	625	0	98.74	1.26	ASIA	Sindh-08
7	Asia1/TUR/18/2015	TUR15-18	633	624	0	98.58	1.42	ASIA	Sindh-08
8	Asia1/IRN/20/2015	IRN15-20	633	622	0	98.26	1.74	ASIA	Sindh-08
9	Asia1/PAK/19/2014	PAK14-19	633	618	0	97.63	2.37	ASIA	Sindh-08
10	Asia1/PAK/20/2014	PAK14-20	633	617	0	97.47	2.53	ASIA	Sindh-08
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	Asia1/PAK/8/2008	PAK08-08	633	593	0	93.68	6.32	ASIA	Sindh-08
2	Asia1/AFG/1/2001 (DQ121109)	AFG01-01	633	567	0	89.57	10.43	ASIA	unnamed
3	Asia1/IND/762/2003* (DQ101240)	IND03-AB	633	535	0	84.52	15.48	ASIA	Group III
4	Asia1/IND/63/72* (AY304994)	IND72C63	630	527	0	83.65	16.35	ASIA	unnamed
5	Asia1/IND/18/80 (DQ121116)	IND80-18	633	527	0	83.25	16.75	ASIA	unnamed
6	Asia1/IND/14/95* (AF390678)	IND95-AA	633	525	0	82.94	17.06	ASIA	unnamed
7	Asia1/Shamir/ISR/89	ISR89--A	633	524	0	82.78	17.22	ASIA	unnamed
8	Asia1/YNBS/CHA/58 (AY390432)	CHA58-AA	633	524	0	82.78	17.22	ASIA	unnamed
9	Asia1/HKN/19/74 (FJ785230)	HKN74-19	633	521	0	82.31	17.69	ASIA	unnamed
10	Asia1/IRN/10/2004 (DQ121119)	IRN04-10	633	520	0	82.15	17.85	ASIA	unnamed

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: ASIA1	Report date: 13/02/2016
WRLFMD Ref No: IRN/20/2015	Reported by: N.J. Knowles
Batch No: WRLFMD/2015/00031	Checked by: D.P. King
Sender Ref: IR-94-07	
Location: Yazd, Iran	Topotype: ASIA
Date collected: 23/10/2015	Genotype/strain: Sindh-08
Date received by WRLFMD: 20/11/2015	Sequence filename: IRN15-20.SEQ
Date received for sequencing: 11/02/2016	Date sequence last updated: 13/02/2016
Species: Cattle	No. of Nt determined: 633
Material used: BTY1 28/01/2016	No. of ambiguities: 0
Region sequenced: VP1	Gene length: 633
RT-PCR primers: As1-1C530F/EUR-2B52R	Total no. of comparisons: 581
As1-1C613F/EUR-2B52R	Min. no. of nt for comparison: 600
	Total turn-around time: 85 days
	Sequencing time: 2 days
Comments:	

Most Closely Related Viruses									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	Asia1/TUR/9/2015	TUR15-09	633	627	0	99.05	0.95	ASIA	Sindh-08
2	Asia1/TUR/12/2015	TUR15-12	633	626	0	98.89	1.11	ASIA	Sindh-08
3	Asia1/TUR/2/2015	TUR15-02	633	626	0	98.89	1.11	ASIA	Sindh-08
4	Asia1/TUR/7/2015	TUR15-07	633	626	0	98.89	1.11	ASIA	Sindh-08
5	Asia1/IRN/1/2015	IRN15-01	631	623	2	98.73	1.27	ASIA	Sindh-08
6	Asia1/PAK/1/2015	PAK15-01	633	624	0	98.58	1.42	ASIA	Sindh-08
7	Asia1/TUR/18/2015	TUR15-18	633	623	0	98.42	1.58	ASIA	Sindh-08
8	Asia1/IRN/2/2015	IRN15-02	633	622	0	98.26	1.74	ASIA	Sindh-08
9	Asia1/PAK/19/2014	PAK14-19	633	619	0	97.79	2.21	ASIA	Sindh-08
10	Asia1/PAK/20/2014	PAK14-20	633	618	0	97.63	2.37	ASIA	Sindh-08
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	Asia1/PAK/8/2008	PAK08-08	633	593	0	93.68	6.32	ASIA	Sindh-08
2	Asia1/AFG/1/2001 (DQ121109)	AFG01-01	633	569	0	89.89	10.11	ASIA	unnamed
3	Asia1/IND/762/2003* (DQ101240)	IND03-AB	633	537	0	84.83	15.17	ASIA	Group III
4	Asia1/IND/63/72* (AY304994)	IND72C63	630	529	0	83.97	16.03	ASIA	unnamed
5	Asia1/IND/18/80 (DQ121116)	IND80-18	633	528	0	83.41	16.59	ASIA	unnamed
6	Asia1/IND/14/95* (AF390678)	IND95-AA	633	525	0	82.94	17.06	ASIA	unnamed
7	Asia1/Shamir/ISR/89	ISR89--A	633	523	0	82.62	17.38	ASIA	unnamed
8	Asia1/YNBS/CHA/58 (AY390432)	CHA58-AA	633	523	0	82.62	17.38	ASIA	unnamed
9	Asia1/IRN/10/2004 (DQ121119)	IRN04-10	633	520	0	82.15	17.85	ASIA	unnamed
10	Asia1/HKN/19/74 (FJ785230)	HKN74-19	633	519	0	81.99	18.01	ASIA	unnamed

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 Asia 1 in Iran in 2015

Batch: WRLFMD/2015/00031

◆ indicates viruses in this batch

Software: MEGA 6.06

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 : 633

No Of Bootstrap Reps = 1000

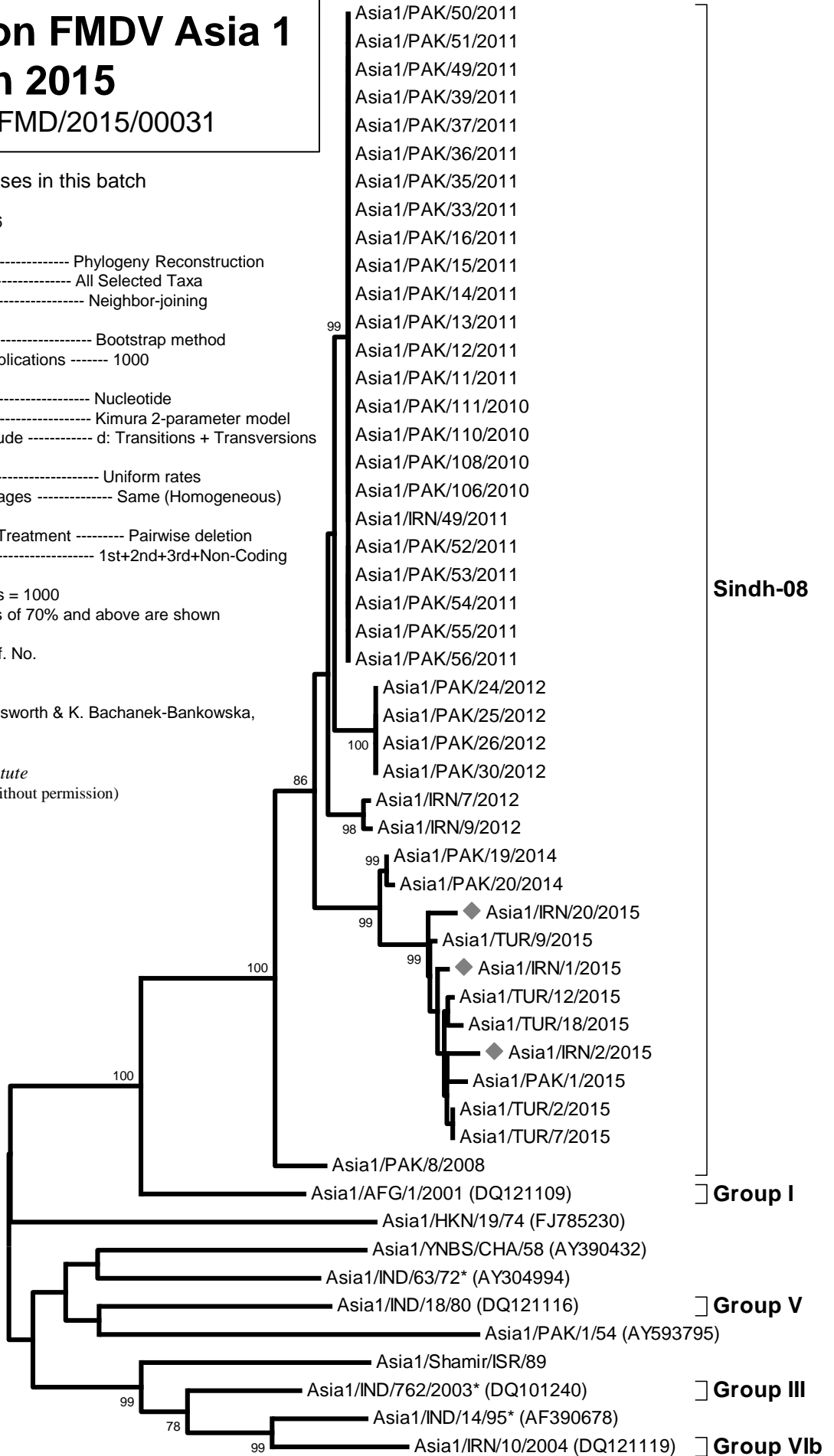
Only bootstrap values of 70% and above are shown

*, not a WRLFMD Ref. No.

N.J. Knowles, J. Wadsworth & K. Bachanek-Bankowska,
15 February 2016

© The Pirbright Institute

(not to be reproduced without permission)



Sindh-08

Group I

Group V

Group III

Group VIb

0.02