

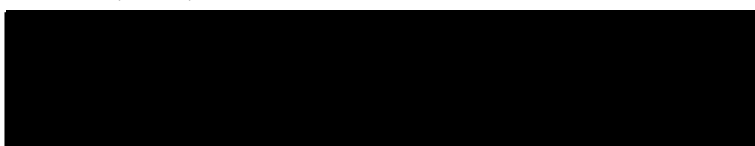


INSTITUTE FOR ANIMAL HEALTH
Director: Professor John Fazakerley BSc, MBA, PhD, FRCPath
PIRBRIGHT LABORATORY
Ash Road,
Pirbright,
Surrey,
GU24 0NF
Intn Tel: 00 44 1483 232441
Tel: 01483 232441 Fax: 01483 232621

FMD Genotyping Report

Lab Reference WRL Batch Number: WRLFMD/2012/00027

Sender Details:

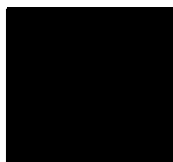


Date Received: 20th July 2012
Country of Origin: Iran
Date Reported: 29th August 2012

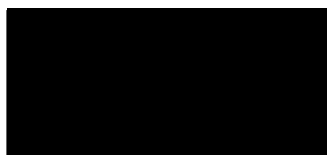
Dear Darab Abdollahi

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/>

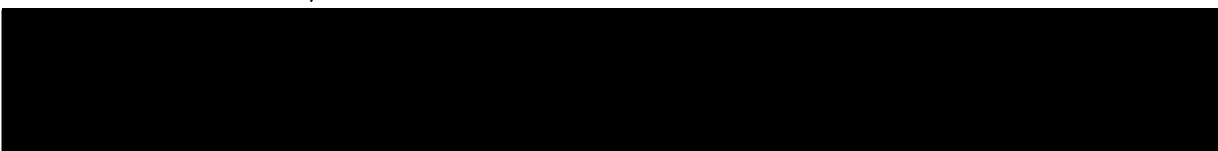
Results Approved By:



Official Stamp:



Date: 29/08/2012



A UKAS accredited testing laboratory No. 4025.

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: gareth.shimmon@iah.ac.uk. IAH actively seeks and appreciates feedback, if you would like to offer feedback please complete the WRLFMD survey here: <http://www.surveymonkey.com/s/WRLFMD>

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

Genotyping Report

Report Date for this Batch: 28 August 2012

FMDV type Asia 1

Country: Iran

Period: 2012

No. of samples: 3

BATCH: WRLFMD/2012/00027



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FAO World Reference Laboratory for FMD Genotyping Report

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

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| | |
|---|--|
| Serotype: ASIA1 | Report date: 28/08/2012 |
| WRLFMD Ref No: IRN/14/2012 | Reported by: N.J. Knowles |
| Batch No: WRLFMD/2012/00027 | Checked by: D.P. King |
| Sender Ref: FMD SA 91-2 | |
| Location: Saravan, Sistan and Baluchestan, Iran | Topotype: ASIA |
| Date collected: 23/06/2012 | Genotype/strain: Sindh-08 |
| Date received by WRLFMD: 20/07/2012 | Sequence filename: IRN12-14.SEQ |
| Date received for sequencing: 08/08/2012 | Date sequence last updated: 09/08/2012 |
| Species: Cattle | No. of Nt determined: 633 |
| Material used: BTy1 | No. of ambiguities: 0 |
| Region sequenced: VP1 | Gene length: 633 |
| RT-PCR primers: As1-1C530F/EUR-2B52R | Total no. of comparisons: 450 |
| As1-1C613F/EUR-2B52R | Min. no. of nt for comparison: 600 |
| | Total turn-around time: 39 days |
| | Sequencing time: 20 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/19/2012 | IRN12-19 | 633 | 632 | 0 | 99.84 | 0.16 | ASIA | Sindh-08 |
| 2 | Asia1/AFG/40/2011 | AFG11-40 | 633 | 620 | 0 | 97.95 | 2.05 | ASIA | Sindh-08 |
| 3 | Asia1/IRN/49/2011 | IRN11-49 | 633 | 620 | 0 | 97.95 | 2.05 | ASIA | Sindh-08 |
| 4 | Asia1/PAK/106/2010 | PAK10106 | 633 | 620 | 0 | 97.95 | 2.05 | ASIA | Sindh-08 |
| 5 | Asia1/PAK/108/2010 | PAK10108 | 633 | 620 | 0 | 97.95 | 2.05 | ASIA | Sindh-08 |
| 6 | Asia1/PAK/11/2011 | PAK11-11 | 633 | 620 | 0 | 97.95 | 2.05 | ASIA | Sindh-08 |
| 7 | Asia1/PAK/110/2010 | PAK10110 | 633 | 620 | 0 | 97.95 | 2.05 | ASIA | Sindh-08 |
| 8 | Asia1/PAK/111/2010 | PAK10111 | 633 | 620 | 0 | 97.95 | 2.05 | ASIA | Sindh-08 |
| 9 | Asia1/PAK/12/2011 | PAK11-12 | 633 | 620 | 0 | 97.95 | 2.05 | ASIA | Sindh-08 |
| 10 | Asia1/PAK/13/2011 | PAK11-13 | 633 | 620 | 0 | 97.95 | 2.05 | 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 | 603 | 0 | 95.26 | 4.74 | ASIA | Sindh-08 |
| 2 | Asia1/AFG/1/2001 (DQ121109) | AFG01-01 | 633 | 573 | 0 | 90.52 | 9.48 | ASIA | Group I |
| 3 | Asia1/IND/762/2003* (DQ101240) | IND03-AB | 633 | 543 | 0 | 85.78 | 14.22 | ASIA | Group III |
| 4 | Asia1/IND/18/80 (DQ121116) | IND80-18 | 633 | 536 | 0 | 84.68 | 15.32 | ASIA | Group V |
| 5 | Asia1/Shamir/ISR/89 | ISR89--A | 633 | 536 | 0 | 84.68 | 15.32 | ASIA | Unnamed |
| 6 | Asia1/IND/63/72* (AY304994) | IND72C63 | 630 | 533 | 0 | 84.60 | 15.40 | ASIA | Unnamed |
| 7 | Asia1/YNBS/CHA/58 (AY390432) | CHA58-AA | 633 | 533 | 0 | 84.20 | 15.80 | ASIA | Unnamed |
| 8 | Asia1/IND/14/95* (AF390678) | IND95-AA | 633 | 532 | 0 | 84.04 | 15.96 | ASIA | Unnamed |
| 9 | Asia1/HKN/19/74 | HKN74-19 | 633 | 531 | 0 | 83.89 | 16.11 | ASIA | Unnamed |
| 10 | Asia1/IRN/10/2004 (DQ121119) | IRN04-10 | 633 | 527 | 0 | 83.25 | 16.75 | ASIA | Group VIb |

nt, nucleotides

*, not a WRLFMD reference number

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FAO World Reference Laboratory for FMD Genotyping Report

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

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| | |
|--|--|
| Serotype: ASIA1 | Report date: 28/08/2012 |
| WRLFMD Ref No: IRN/19/2012 | Reported by: N.J. Knowles |
| Batch No: WRLFMD/2012/00027 | Checked by: D.P. King |
| Sender Ref: Lab Samples 3 | |
| Location: Sistan and Baluchestan, Iran | Topotype: ASIA |
| Date collected: 30/06/2012 | Genotype/strain: Sindh-08 |
| Date received by WRLFMD: 20/07/2012 | Sequence filename: IRN12-19.SEQ |
| Date received for sequencing: 08/08/2012 | Date sequence last updated: 14/08/2012 |
| Species: Cattle | No. of Nt determined: 633 |
| Material used: BTy1 | No. of ambiguities: 0 |
| Region sequenced: VP1 | Gene length: 633 |
| RT-PCR primers: As1-1C530F/EUR-2B52R | Total no. of comparisons: 450 |
| As1-1C613F/EUR-2B52R | Min. no. of nt for comparison: 600 |
| | Total turn-around time: 39 days |
| | Sequencing time: 20 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/14/2012 | IRN12-14 | 633 | 632 | 0 | 99.84 | 0.16 | ASIA | Sindh-08 |
| 2 | Asia1/AFG/40/2011 | AFG11-40 | 633 | 619 | 0 | 97.79 | 2.21 | ASIA | Sindh-08 |
| 3 | Asia1/IRN/49/2011 | IRN11-49 | 633 | 619 | 0 | 97.79 | 2.21 | ASIA | Sindh-08 |
| 4 | Asia1/PAK/106/2010 | PAK10106 | 633 | 619 | 0 | 97.79 | 2.21 | ASIA | Sindh-08 |
| 5 | Asia1/PAK/108/2010 | PAK10108 | 633 | 619 | 0 | 97.79 | 2.21 | ASIA | Sindh-08 |
| 6 | Asia1/PAK/11/2011 | PAK11-11 | 633 | 619 | 0 | 97.79 | 2.21 | ASIA | Sindh-08 |
| 7 | Asia1/PAK/110/2010 | PAK10110 | 633 | 619 | 0 | 97.79 | 2.21 | ASIA | Sindh-08 |
| 8 | Asia1/PAK/111/2010 | PAK10111 | 633 | 619 | 0 | 97.79 | 2.21 | ASIA | Sindh-08 |
| 9 | Asia1/PAK/12/2011 | PAK11-12 | 633 | 619 | 0 | 97.79 | 2.21 | ASIA | Sindh-08 |
| 10 | Asia1/PAK/13/2011 | PAK11-13 | 633 | 619 | 0 | 97.79 | 2.21 | 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 | 604 | 0 | 95.42 | 4.58 | ASIA | Sindh-08 |
| 2 | Asia1/AFG/1/2001 (DQ121109) | AFG01-01 | 633 | 574 | 0 | 90.68 | 9.32 | ASIA | Group I |
| 3 | Asia1/IND/762/2003* (DQ101240) | IND03-AB | 633 | 544 | 0 | 85.94 | 14.06 | ASIA | Group III |
| 4 | Asia1/IND/18/80 (DQ121116) | IND80-18 | 633 | 537 | 0 | 84.83 | 15.17 | ASIA | Group V |
| 5 | Asia1/Shamir/ISR/89 | ISR89--A | 633 | 537 | 0 | 84.83 | 15.17 | ASIA | Unnamed |
| 6 | Asia1/IND/63/72* (AY304994) | IND72C63 | 630 | 532 | 0 | 84.44 | 15.56 | ASIA | Unnamed |
| 7 | Asia1/IND/14/95* (AF390678) | IND95-AA | 633 | 533 | 0 | 84.20 | 15.80 | ASIA | Unnamed |
| 8 | Asia1/HKN/19/74 | HKN74-19 | 633 | 532 | 0 | 84.04 | 15.96 | ASIA | Unnamed |
| 9 | Asia1/YNBS/CHA/58 (AY390432) | CHA58-AA | 633 | 532 | 0 | 84.04 | 15.96 | ASIA | Unnamed |
| 10 | Asia1/IRN/10/2004 (DQ121119) | IRN04-10 | 633 | 528 | 0 | 83.41 | 16.59 | ASIA | Group VIb |

nt, nucleotides

*, not a WRLFMD reference number

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FAO World Reference Laboratory for FMD Genotyping Report

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| | |
|--|--|
| Serotype: ASIA1 | Report date: 28/08/2012 |
| WRLFMD Ref No: IRN/23/2012 | Reported by: N.J. Knowles |
| Batch No: WRLFMD/2012/00027 | Checked by: D.P. King |
| Sender Ref: FMD SA-91-7 | |
| Location: Kermanshah, Iran | Topotype: ASIA |
| Date collected: 14/07/2012 | Genotype/strain: Sindh-08 |
| Date received by WRLFMD: 20/07/2012 | Sequence filename: IRN12-23.SEQ |
| Date received for sequencing: 08/08/2012 | Date sequence last updated: 09/08/2012 |
| Species: Cattle | No. of Nt determined: 633 |
| Material used: BTy1 | No. of ambiguities: 0 |
| Region sequenced: VP1 | Gene length: 633 |
| RT-PCR primers: As1-1C530F/EUR-2B52R | Total no. of comparisons: 450 |
| As1-1C613F/EUR-2B52R | Min. no. of nt for comparison: 600 |
| | Total turn-around time: 39 days |
| | Sequencing time: 20 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/74/2011 | IRN11-74 | 633 | 632 | 0 | 99.84 | 0.16 | ASIA | Sindh-08 |
| 2 | Asia1/IRN/67/2011 | IRN11-67 | 633 | 631 | 0 | 99.68 | 0.32 | ASIA | Sindh-08 |
| 3 | Asia1/IRN/75/2011 | IRN11-75 | 633 | 631 | 0 | 99.68 | 0.32 | ASIA | Sindh-08 |
| 4 | Asia1/IRN/58/2011 | IRN11-58 | 633 | 630 | 0 | 99.53 | 0.47 | ASIA | Sindh-08 |
| 5 | Asia1/IRN/60/2011 | IRN11-60 | 633 | 630 | 0 | 99.53 | 0.47 | ASIA | Sindh-08 |
| 6 | Asia1/IRN/59/2011 | IRN11-59 | 633 | 629 | 0 | 99.37 | 0.63 | ASIA | Sindh-08 |
| 7 | Asia1/TUR/1/2012 | TUR12-01 | 633 | 629 | 0 | 99.37 | 0.63 | ASIA | Sindh-08 |
| 8 | Asia1/TUR/66/2011 | TUR11-66 | 633 | 629 | 0 | 99.37 | 0.63 | ASIA | Sindh-08 |
| 9 | Asia1/IRN/56/2011 | IRN11-56 | 633 | 628 | 0 | 99.21 | 0.79 | ASIA | Sindh-08 |
| 10 | Asia1/TUR/2/2012 | TUR12-02 | 633 | 628 | 0 | 99.21 | 0.79 | 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 | 607 | 0 | 95.89 | 4.11 | ASIA | Sindh-08 |
| 2 | Asia1/AFG/1/2001 (DQ121109) | AFG01-01 | 633 | 570 | 0 | 90.05 | 9.95 | ASIA | Group I |
| 3 | Asia1/IND/762/2003* (DQ101240) | IND03-AB | 633 | 539 | 0 | 85.15 | 14.85 | ASIA | Group III |
| 4 | Asia1/IND/63/72* (AY304994) | IND72C63 | 630 | 533 | 0 | 84.60 | 15.40 | ASIA | Unnamed |
| 5 | Asia1/IND/18/80 (DQ121116) | IND80-18 | 633 | 531 | 0 | 83.89 | 16.11 | ASIA | Group V |
| 6 | Asia1/Shamir/ISR/89 | ISR89--A | 633 | 531 | 0 | 83.89 | 16.11 | ASIA | Unnamed |
| 7 | Asia1/IND/14/95* (AF390678) | IND95-AA | 633 | 530 | 0 | 83.73 | 16.27 | ASIA | Unnamed |
| 8 | Asia1/YNBS/CHA/58 (AY390432) | CHA58-AA | 633 | 529 | 0 | 83.57 | 16.43 | ASIA | Unnamed |
| 9 | Asia1/HKN/19/74 | HKN74-19 | 633 | 526 | 0 | 83.10 | 16.90 | ASIA | Unnamed |
| 10 | Asia1/IRN/10/2004 (DQ121119) | IRN04-10 | 633 | 523 | 0 | 82.62 | 17.38 | ASIA | Group VIb |

nt, nucleotides

*, not a WRLFMD reference number

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Report on FMDV Asia 1 in Iran in 2012

Batch: WRLFMD/2012/00027

◆ indicates viruses in this batch

Software: MEGA 5.0

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 : 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, 28 August 2012

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