

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

Genotyping Report

Report Date for this Batch: 15 February 2016

FMDV type O

Country: Iran

Period: 2015

No. of samples: 7

BATCH: WRLFMD/2015/00031



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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: 13/02/2016 |
| WRLFMD Ref No: IRN/3/2015 | Reported by: N.J. Knowles |
| Batch No: WRLFMD/2015/00031 | Checked by: D.P. King |
| Sender Ref: IR-94-04 | |
| Location: Lorestan, Iran | Topotype: ME-SA |
| Date collected: 28/04/2015 | Genotype/strain: PanAsia-2 ^{FAR-09} |
| Date received by WRLFMD: 20/11/2015 | Sequence filename: IRN15-03.SEQ |
| Date received for sequencing: 11/12/2015 | Date sequence last updated: 15/12/2015 |
| Species: Cattle | No. of Nt determined: 639 |
| Material used: BTy2 27/11/2015 | No. of ambiguities: 0 |
| Region sequenced: VP1 | Gene length: 639 |
| RT-PCR primers: O-1C244F/EUR-2B52R | Total no. of comparisons: 4208 |
| O-1C272F/EUR-2B52R | Min. no. of nt for comparison: 600 |
| | Total turn-around time: 85 days |
| | Sequencing time: 64 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/IRN/7/2015 | IRN15-07 | 639 | 636 | 0 | 99.53 | 0.47 | ME-SA | PanAsia-2 ^{FAR-09} |
| 2 | O/TUR/10/2015 | TUR15-10 | 639 | 634 | 0 | 99.22 | 0.78 | ME-SA | PanAsia-2 ^{FAR-09} |
| 3 | O/TUR/17/2015 | TUR15-17 | 639 | 634 | 0 | 99.22 | 0.78 | ME-SA | PanAsia-2 ^{FAR-09} |
| 4 | O/IRN/29/2013 | IRN13-29 | 639 | 624 | 0 | 97.65 | 2.35 | ME-SA | PanAsia-2 ^{FAR-09} |
| 5 | O/IRN/23/2013 | IRN13-23 | 639 | 623 | 0 | 97.50 | 2.50 | ME-SA | PanAsia-2 ^{FAR-09} |
| 6 | O/IRN/22/2013 | IRN13-22 | 639 | 621 | 0 | 97.18 | 2.82 | ME-SA | PanAsia-2 ^{FAR-09} |
| 7 | O/IRN/17/2013 | IRN13-17 | 639 | 619 | 0 | 96.87 | 3.13 | ME-SA | PanAsia-2 ^{FAR-09} |
| 8 | O/IRN/30/2013 | IRN13-30 | 639 | 619 | 0 | 96.87 | 3.13 | ME-SA | PanAsia-2 ^{FAR-09} |
| 9 | O/IRN 3917/2012* | IRN12-AM | 639 | 613 | 0 | 95.93 | 4.07 | ME-SA | PanAsia-2 ^{FAR-09} |
| 10 | O/IRN 12463/2012* | IRN12-AQ | 639 | 612 | 0 | 95.77 | 4.23 | ME-SA | PanAsia-2 ^{FAR-09} |
| 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/IRN/31/2009 | IRN09-31 | 639 | 610 | 0 | 95.46 | 4.54 | ME-SA | PanAsia-2 ^{FAR-09} |
| 2 | O/IRN/8/2005 | IRN05-08 | 639 | 599 | 0 | 93.74 | 6.26 | ME-SA | PanAsia-2 |
| 3 | O/IRN/18/2010 | IRN10-18 | 639 | 596 | 0 | 93.27 | 6.73 | ME-SA | PanAsia-2 ^{BAL-09} |
| 4 | O/TUR/257/2008* (FMDI) | TUR08-AD | 639 | 594 | 0 | 92.96 | 7.04 | ME-SA | PanAsia-2 ^{TER-08} |
| 5 | O/PAK/16/2010 | PAK10-16 | 639 | 593 | 0 | 92.80 | 7.20 | ME-SA | PanAsia-2 ^{PUN-10} |
| 6 | O/UKG/35/2001 (AJ539141) | UKG01-35 | 639 | 588 | 0 | 92.02 | 7.98 | ME-SA | PanAsia |
| 7 | O/TUR/264/2009* (FMDI) | TUR09-AK | 639 | 587 | 0 | 91.86 | 8.14 | ME-SA | PanAsia-2 ^{SAN-09} |
| 8 | O/IRN/88/2009 | IRN09-88 | 639 | 586 | 0 | 91.71 | 8.29 | ME-SA | PanAsia-2 ^{ANT-10} |
| 9 | O/KUW/3/97 (DQ164904) | KUW97-03 | 639 | 577 | 0 | 90.30 | 9.70 | ME-SA | Ind-2001a |
| 10 | O/BHU/3/2009 (KM921814) | BHU09-03 | 639 | 569 | 0 | 89.05 | 10.95 | ME-SA | Ind-2001d |

nt, nucleotides

*, not a WRLFMD reference number

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| | |
|--|--|
| Serotype: O | Report date: 13/02/2016 |
| WRLFMD Ref No: IRN/4/2015 | Reported by: N.J. Knowles |
| Batch No: WRLFMD/2015/00031 | Checked by: D.P. King |
| Sender Ref: IR-94-03 | |
| Location: Kermanshah, Iran | Topotype: ME-SA |
| Date collected: 08/05/2015 | Genotype/strain: PanAsia-2 ^{ANT-10} |
| Date received by WRLFMD: 20/11/2015 | Sequence filename: IRN15-04.SEQ |
| Date received for sequencing: 11/12/2015 | Date sequence last updated: 15/12/2015 |
| Species: Cattle | No. of Nt determined: 639 |
| Material used: BTy1 24/11/2015 | No. of ambiguities: 0 |
| Region sequenced: VP1 | Gene length: 639 |
| RT-PCR primers: O-1C244F/EUR-2B52R | Total no. of comparisons: 4208 |
| O-1C272F/EUR-2B52R | Min. no. of nt for comparison: 600 |
| | Total turn-around time: 85 days |
| | Sequencing time: 64 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/PAK/1/2014 | PAK14-01 | 639 | 631 | 0 | 98.75 | 1.25 | ME-SA | PanAsia-2 ^{ANT-10} |
| 2 | O/PAK/9/2014 | PAK14-09 | 639 | 631 | 0 | 98.75 | 1.25 | ME-SA | PanAsia-2 ^{ANT-10} |
| 3 | O/IRN/130/2010 | IRN10130 | 639 | 612 | 0 | 95.77 | 4.23 | ME-SA | PanAsia-2 ^{ANT-10} |
| 4 | O/IRN/137/2010 | IRN10137 | 639 | 612 | 0 | 95.77 | 4.23 | ME-SA | PanAsia-2 ^{ANT-10} |
| 5 | O/IRN/14/2010 | IRN10-14 | 639 | 612 | 0 | 95.77 | 4.23 | ME-SA | PanAsia-2 ^{ANT-10} |
| 6 | O/IRN/30/2010 | IRN10-30 | 639 | 612 | 0 | 95.77 | 4.23 | ME-SA | PanAsia-2 ^{ANT-10} |
| 7 | O/IRN/4/2010 | IRN10-04 | 639 | 612 | 0 | 95.77 | 4.23 | ME-SA | PanAsia-2 ^{ANT-10} |
| 8 | O/PAK/3/2010 | PAK10-03 | 639 | 612 | 0 | 95.77 | 4.23 | ME-SA | PanAsia-2 ^{ANT-10} |
| 9 | O/PAK/4/2010 | PAK10-04 | 639 | 612 | 0 | 95.77 | 4.23 | ME-SA | PanAsia-2 ^{ANT-10} |
| 10 | O/PAK/9/2010 | PAK10-09 | 639 | 612 | 0 | 95.77 | 4.23 | ME-SA | PanAsia-2 ^{ANT-10} |
| 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/IRN/88/2009 | IRN09-88 | 639 | 610 | 0 | 95.46 | 4.54 | ME-SA | PanAsia-2 ^{ANT-10} |
| 2 | O/IRN/31/2009 | IRN09-31 | 639 | 584 | 0 | 91.39 | 8.61 | ME-SA | PanAsia-2 ^{FAR-09} |
| 3 | O/IRN/8/2005 | IRN05-08 | 639 | 582 | 0 | 91.08 | 8.92 | ME-SA | PanAsia-2 |
| 4 | O/TUR/257/2008* (FMDI) | TUR08-AD | 639 | 582 | 0 | 91.08 | 8.92 | ME-SA | PanAsia-2 ^{TER-08} |
| 5 | O/IRN/18/2010 | IRN10-18 | 639 | 579 | 0 | 90.61 | 9.39 | ME-SA | PanAsia-2 ^{BAL-09} |
| 6 | O/TUR/264/2009* (FMDI) | TUR09-AK | 639 | 577 | 0 | 90.30 | 9.70 | ME-SA | PanAsia-2 ^{SAN-09} |
| 7 | O/PAK/16/2010 | PAK10-16 | 639 | 572 | 0 | 89.51 | 10.49 | ME-SA | PanAsia-2 ^{PUN-10} |
| 8 | O/UKG/35/2001 (AJ539141) | UKG01-35 | 639 | 569 | 0 | 89.05 | 10.95 | ME-SA | PanAsia |
| 9 | O/BHU/3/2009 (KM921814) | BHU09-03 | 639 | 556 | 0 | 87.01 | 12.99 | ME-SA | Ind-2001d |
| 10 | O/UAE/4/2008 (KM921876) | UAE08-04 | 636 | 553 | 0 | 86.95 | 13.05 | ME-SA | Ind-2001c |

nt, nucleotides

*, not a WRLFMD reference number

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|--|--|
| Serotype: O | Report date: 13/02/2016 |
| WRLFMD Ref No: IRN/6/2015 | Reported by: N.J. Knowles |
| Batch No: WRLFMD/2015/00031 | Checked by: D.P. King |
| Sender Ref: IR-94-13 | |
| Location: Qom, Iran | Topotype: ME-SA |
| Date collected: 15/06/2015 | Genotype/strain: PanAsia-2 ^{BAL-09} |
| Date received by WRLFMD: 20/11/2015 | Sequence filename: IRN15-06.SEQ |
| Date received for sequencing: 02/12/2015 | Date sequence last updated: 04/12/2015 |
| Species: Cattle | No. of Nt determined: 639 |
| Material used: BTy1 25/11/2015 | No. of ambiguities: 0 |
| Region sequenced: VP1 | Gene length: 639 |
| RT-PCR primers: O-1C244F/EUR-2B52R | Total no. of comparisons: 4208 |
| O-1C272F/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 | O/IRN/26/2015 | IRN15-26 | 639 | 638 | 0 | 99.84 | 0.16 | ME-SA | PanAsia-2 ^{BAL-09} |
| 2 | O/IRN/15/2015 | IRN15-15 | 639 | 637 | 0 | 99.69 | 0.31 | ME-SA | PanAsia-2 ^{BAL-09} |
| 3 | O/IRN/16/2015 | IRN15-16 | 639 | 637 | 0 | 99.69 | 0.31 | ME-SA | PanAsia-2 ^{BAL-09} |
| 4 | O/AFG/109/2010 | AFG10109 | 639 | 610 | 0 | 95.46 | 4.54 | ME-SA | PanAsia-2 ^{BAL-09} |
| 5 | O/AFG/12/2010 | AFG10-12 | 639 | 610 | 0 | 95.46 | 4.54 | ME-SA | PanAsia-2 ^{BAL-09} |
| 6 | O/AFG/19/2010 | AFG10-19 | 639 | 610 | 0 | 95.46 | 4.54 | ME-SA | PanAsia-2 ^{BAL-09} |
| 7 | O/AFG/21/2010 | AFG10-21 | 639 | 610 | 0 | 95.46 | 4.54 | ME-SA | PanAsia-2 ^{BAL-09} |
| 8 | O/AFG/22/2009 | AFG09-22 | 639 | 610 | 0 | 95.46 | 4.54 | ME-SA | PanAsia-2 ^{BAL-09} |
| 9 | O/AFG/22/2010 | AFG10-22 | 639 | 610 | 0 | 95.46 | 4.54 | ME-SA | PanAsia-2 ^{BAL-09} |
| 10 | O/AFG/23/2010 | AFG10-23 | 639 | 610 | 0 | 95.46 | 4.54 | ME-SA | PanAsia-2 ^{BAL-09} |
| 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/IRN/18/2010 | IRN10-18 | 639 | 608 | 0 | 95.15 | 4.85 | ME-SA | PanAsia-2 ^{BAL-09} |
| 2 | O/IRN/31/2009 | IRN09-31 | 639 | 597 | 0 | 93.43 | 6.57 | ME-SA | PanAsia-2 ^{FAR-09} |
| 3 | O/IRN/8/2005 | IRN05-08 | 639 | 592 | 0 | 92.64 | 7.36 | ME-SA | PanAsia-2 |
| 4 | O/IRN/88/2009 | IRN09-88 | 639 | 590 | 0 | 92.33 | 7.67 | ME-SA | PanAsia-2 ^{ANT-10} |
| 5 | O/TUR/257/2008* (FMDI) | TUR08-AD | 639 | 590 | 0 | 92.33 | 7.67 | ME-SA | PanAsia-2 ^{TER-08} |
| 6 | O/PAK/16/2010 | PAK10-16 | 639 | 587 | 0 | 91.86 | 8.14 | ME-SA | PanAsia-2 ^{PUN-10} |
| 7 | O/TUR/264/2009* (FMDI) | TUR09-AK | 639 | 585 | 0 | 91.55 | 8.45 | ME-SA | PanAsia-2 ^{SAN-09} |
| 8 | O/UKG/35/2001 (AJ539141) | UKG01-35 | 639 | 580 | 0 | 90.77 | 9.23 | ME-SA | PanAsia |
| 9 | O/KUW/3/97 (DQ164904) | KUW97-03 | 639 | 572 | 0 | 89.51 | 10.49 | ME-SA | Ind-2001a |
| 10 | O/OMN/7/2001 (DQ164941) | OMN01-07 | 639 | 564 | 0 | 88.26 | 11.74 | ME-SA | Ind-2001b |

nt, nucleotides

*, not a WRLFMD reference number

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| | |
|--|--|
| Serotype: O | Report date: 13/02/2016 |
| WRLFMD Ref No: IRN/7/2015 | Reported by: N.J. Knowles |
| Batch No: WRLFMD/2015/00031 | Checked by: D.P. King |
| Sender Ref: IR-94-06 | |
| Location: Tehran, Iran | Topotype: ME-SA |
| Date collected: 16/08/2015 | Genotype/strain: PanAsia-2 ^{FAR-09} |
| Date received by WRLFMD: 20/11/2015 | Sequence filename: IRN15-07.SEQ |
| Date received for sequencing: 11/12/2015 | Date sequence last updated: 15/12/2015 |
| Species: Cattle | No. of Nt determined: 639 |
| Material used: BTy1 25/11/2015 | No. of ambiguities: 0 |
| Region sequenced: VP1 | Gene length: 639 |
| RT-PCR primers: O-1C244F/EUR-2B52R | Total no. of comparisons: 4208 |
| O-1C272F/EUR-2B52R | Min. no. of nt for comparison: 600 |
| | Total turn-around time: 85 days |
| | Sequencing time: 64 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/TUR/10/2015 | TUR15-10 | 639 | 637 | 0 | 99.69 | 0.31 | ME-SA | PanAsia-2 ^{FAR-09} |
| 2 | O/TUR/17/2015 | TUR15-17 | 639 | 637 | 0 | 99.69 | 0.31 | ME-SA | PanAsia-2 ^{FAR-09} |
| 3 | O/IRN/3/2015 | IRN15-03 | 639 | 636 | 0 | 99.53 | 0.47 | ME-SA | PanAsia-2 ^{FAR-09} |
| 4 | O/IRN/29/2013 | IRN13-29 | 639 | 627 | 0 | 98.12 | 1.88 | ME-SA | PanAsia-2 ^{FAR-09} |
| 5 | O/IRN/23/2013 | IRN13-23 | 639 | 626 | 0 | 97.97 | 2.03 | ME-SA | PanAsia-2 ^{FAR-09} |
| 6 | O/IRN/22/2013 | IRN13-22 | 639 | 624 | 0 | 97.65 | 2.35 | ME-SA | PanAsia-2 ^{FAR-09} |
| 7 | O/IRN/17/2013 | IRN13-17 | 639 | 622 | 0 | 97.34 | 2.66 | ME-SA | PanAsia-2 ^{FAR-09} |
| 8 | O/IRN/30/2013 | IRN13-30 | 639 | 622 | 0 | 97.34 | 2.66 | ME-SA | PanAsia-2 ^{FAR-09} |
| 9 | O/IRN 3917/2012* | IRN12-AM | 639 | 616 | 0 | 96.40 | 3.60 | ME-SA | PanAsia-2 ^{FAR-09} |
| 10 | O/IRN 12463/2012* | IRN12-AQ | 639 | 615 | 0 | 96.24 | 3.76 | ME-SA | PanAsia-2 ^{FAR-09} |
| 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/IRN/31/2009 | IRN09-31 | 639 | 613 | 0 | 95.93 | 4.07 | ME-SA | PanAsia-2 ^{FAR-09} |
| 2 | O/IRN/8/2005 | IRN05-08 | 639 | 600 | 0 | 93.90 | 6.10 | ME-SA | PanAsia-2 |
| 3 | O/IRN/18/2010 | IRN10-18 | 639 | 599 | 0 | 93.74 | 6.26 | ME-SA | PanAsia-2 ^{BAL-09} |
| 4 | O/TUR/257/2008* (FMDI) | TUR08-AD | 639 | 597 | 0 | 93.43 | 6.57 | ME-SA | PanAsia-2 ^{TER-08} |
| 5 | O/PAK/16/2010 | PAK10-16 | 639 | 596 | 0 | 93.27 | 6.73 | ME-SA | PanAsia-2 ^{PUN-10} |
| 6 | O/UKG/35/2001 (AJ539141) | UKG01-35 | 639 | 591 | 0 | 92.49 | 7.51 | ME-SA | PanAsia |
| 7 | O/TUR/264/2009* (FMDI) | TUR09-AK | 639 | 590 | 0 | 92.33 | 7.67 | ME-SA | PanAsia-2 ^{SAN-09} |
| 8 | O/IRN/88/2009 | IRN09-88 | 639 | 589 | 0 | 92.18 | 7.82 | ME-SA | PanAsia-2 ^{ANT-10} |
| 9 | O/KUW/3/97 (DQ164904) | KUW97-03 | 639 | 578 | 0 | 90.45 | 9.55 | ME-SA | Ind-2001a |
| 10 | O/OMN/7/2001 (DQ164941) | OMN01-07 | 639 | 571 | 0 | 89.36 | 10.64 | ME-SA | Ind-2001b |

nt, nucleotides

*, not a WRLFMD reference number

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|--|--|
| Serotype: O | Report date: 13/02/2016 |
| WRLFMD Ref No: IRN/15/2015 | Reported by: N.J. Knowles |
| Batch No: WRLFMD/2015/00031 | Checked by: D.P. King |
| Sender Ref: IR-94-12 | |
| Location: Qom, Iran | Topotype: ME-SA |
| Date collected: 01/10/2015 | Genotype/strain: PanAsia-2 ^{BAL-09} |
| Date received by WRLFMD: 20/11/2015 | Sequence filename: IRN15-15.SEQ |
| Date received for sequencing: 11/12/2015 | Date sequence last updated: 15/12/2015 |
| Species: Cattle | No. of Nt determined: 639 |
| Material used: BTy1 03/12/2015 | No. of ambiguities: 0 |
| Region sequenced: VP1 | Gene length: 639 |
| RT-PCR primers: O-1C244F/EUR-2B52R | Total no. of comparisons: 4208 |
| O-1C272F/EUR-2B52R | Min. no. of nt for comparison: 600 |
| | Total turn-around time: 85 days |
| | Sequencing time: 64 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/IRN/16/2015 | IRN15-16 | 639 | 639 | 0 | 100.00 | 0.00 | ME-SA | PanAsia-2 ^{BAL-09} |
| 2 | O/IRN/6/2015 | IRN15-06 | 639 | 637 | 0 | 99.69 | 0.31 | ME-SA | PanAsia-2 ^{BAL-09} |
| 3 | O/IRN/26/2015 | IRN15-26 | 639 | 636 | 0 | 99.53 | 0.47 | ME-SA | PanAsia-2 ^{BAL-09} |
| 4 | O/AFG/109/2010 | AFG10109 | 639 | 608 | 0 | 95.15 | 4.85 | ME-SA | PanAsia-2 ^{BAL-09} |
| 5 | O/AFG/12/2010 | AFG10-12 | 639 | 608 | 0 | 95.15 | 4.85 | ME-SA | PanAsia-2 ^{BAL-09} |
| 6 | O/AFG/19/2010 | AFG10-19 | 639 | 608 | 0 | 95.15 | 4.85 | ME-SA | PanAsia-2 ^{BAL-09} |
| 7 | O/AFG/21/2010 | AFG10-21 | 639 | 608 | 0 | 95.15 | 4.85 | ME-SA | PanAsia-2 ^{BAL-09} |
| 8 | O/AFG/22/2009 | AFG09-22 | 639 | 608 | 0 | 95.15 | 4.85 | ME-SA | PanAsia-2 ^{BAL-09} |
| 9 | O/AFG/22/2010 | AFG10-22 | 639 | 608 | 0 | 95.15 | 4.85 | ME-SA | PanAsia-2 ^{BAL-09} |
| 10 | O/AFG/23/2010 | AFG10-23 | 639 | 608 | 0 | 95.15 | 4.85 | ME-SA | PanAsia-2 ^{BAL-09} |
| 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/IRN/18/2010 | IRN10-18 | 639 | 606 | 0 | 94.84 | 5.16 | ME-SA | PanAsia-2 ^{BAL-09} |
| 2 | O/IRN/31/2009 | IRN09-31 | 639 | 595 | 0 | 93.11 | 6.89 | ME-SA | PanAsia-2 ^{FAR-09} |
| 3 | O/IRN/8/2005 | IRN05-08 | 639 | 590 | 0 | 92.33 | 7.67 | ME-SA | PanAsia-2 |
| 4 | O/IRN/88/2009 | IRN09-88 | 639 | 590 | 0 | 92.33 | 7.67 | ME-SA | PanAsia-2 ^{ANT-10} |
| 5 | O/TUR/257/2008* (FMDI) | TUR08-AD | 639 | 588 | 0 | 92.02 | 7.98 | ME-SA | PanAsia-2 ^{TER-08} |
| 6 | O/PAK/16/2010 | PAK10-16 | 639 | 585 | 0 | 91.55 | 8.45 | ME-SA | PanAsia-2 ^{PUN-10} |
| 7 | O/TUR/264/2009* (FMDI) | TUR09-AK | 639 | 583 | 0 | 91.24 | 8.76 | ME-SA | PanAsia-2 ^{SAN-09} |
| 8 | O/UKG/35/2001 (AJ539141) | UKG01-35 | 639 | 578 | 0 | 90.45 | 9.55 | ME-SA | PanAsia |
| 9 | O/KUW/3/97 (DQ164904) | KUW97-03 | 639 | 570 | 0 | 89.20 | 10.80 | ME-SA | Ind-2001a |
| 10 | O/BHU/3/2009 (KM921814) | BHU09-03 | 639 | 563 | 0 | 88.11 | 11.89 | ME-SA | Ind-2001d |

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: O | Report date: 13/02/2016 |
| WRLFMD Ref No: IRN/16/2015 | Reported by: N.J. Knowles |
| Batch No: WRLFMD/2015/00031 | Checked by: D.P. King |
| Sender Ref: IR-94-18 | |
| Location: Qom, Iran | Topotype: ME-SA |
| Date collected: 01/10/2015 | Genotype/strain: PanAsia-2 ^{BAL-09} |
| Date received by WRLFMD: 20/11/2015 | Sequence filename: IRN15-16.SEQ |
| Date received for sequencing: 11/12/2015 | Date sequence last updated: 15/12/2015 |
| Species: Cattle | No. of Nt determined: 639 |
| Material used: BTy1 05/12/2015 | No. of ambiguities: 0 |
| Region sequenced: VP1 | Gene length: 639 |
| RT-PCR primers: O-1C244F/EUR-2B52R | Total no. of comparisons: 4208 |
| O-1C272F/EUR-2B52R | Min. no. of nt for comparison: 600 |
| | Total turn-around time: 85 days |
| | Sequencing time: 64 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/IRN/15/2015 | IRN15-15 | 639 | 639 | 0 | 100.00 | 0.00 | ME-SA | PanAsia-2 ^{BAL-09} |
| 2 | O/IRN/6/2015 | IRN15-06 | 639 | 637 | 0 | 99.69 | 0.31 | ME-SA | PanAsia-2 ^{BAL-09} |
| 3 | O/IRN/26/2015 | IRN15-26 | 639 | 636 | 0 | 99.53 | 0.47 | ME-SA | PanAsia-2 ^{BAL-09} |
| 4 | O/AFG/109/2010 | AFG10109 | 639 | 608 | 0 | 95.15 | 4.85 | ME-SA | PanAsia-2 ^{BAL-09} |
| 5 | O/AFG/12/2010 | AFG10-12 | 639 | 608 | 0 | 95.15 | 4.85 | ME-SA | PanAsia-2 ^{BAL-09} |
| 6 | O/AFG/19/2010 | AFG10-19 | 639 | 608 | 0 | 95.15 | 4.85 | ME-SA | PanAsia-2 ^{BAL-09} |
| 7 | O/AFG/21/2010 | AFG10-21 | 639 | 608 | 0 | 95.15 | 4.85 | ME-SA | PanAsia-2 ^{BAL-09} |
| 8 | O/AFG/22/2009 | AFG09-22 | 639 | 608 | 0 | 95.15 | 4.85 | ME-SA | PanAsia-2 ^{BAL-09} |
| 9 | O/AFG/22/2010 | AFG10-22 | 639 | 608 | 0 | 95.15 | 4.85 | ME-SA | PanAsia-2 ^{BAL-09} |
| 10 | O/AFG/23/2010 | AFG10-23 | 639 | 608 | 0 | 95.15 | 4.85 | ME-SA | PanAsia-2 ^{BAL-09} |
| 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/IRN/18/2010 | IRN10-18 | 639 | 606 | 0 | 94.84 | 5.16 | ME-SA | PanAsia-2 ^{BAL-09} |
| 2 | O/IRN/31/2009 | IRN09-31 | 639 | 595 | 0 | 93.11 | 6.89 | ME-SA | PanAsia-2 ^{FAR-09} |
| 3 | O/IRN/8/2005 | IRN05-08 | 639 | 590 | 0 | 92.33 | 7.67 | ME-SA | PanAsia-2 |
| 4 | O/IRN/88/2009 | IRN09-88 | 639 | 590 | 0 | 92.33 | 7.67 | ME-SA | PanAsia-2 ^{ANT-10} |
| 5 | O/TUR/257/2008* (FMDI) | TUR08-AD | 639 | 588 | 0 | 92.02 | 7.98 | ME-SA | PanAsia-2 ^{TER-08} |
| 6 | O/PAK/16/2010 | PAK10-16 | 639 | 585 | 0 | 91.55 | 8.45 | ME-SA | PanAsia-2 ^{PUN-10} |
| 7 | O/TUR/264/2009* (FMDI) | TUR09-AK | 639 | 583 | 0 | 91.24 | 8.76 | ME-SA | PanAsia-2 ^{SAN-09} |
| 8 | O/UKG/35/2001 (AJ539141) | UKG01-35 | 639 | 578 | 0 | 90.45 | 9.55 | ME-SA | PanAsia |
| 9 | O/KUW/3/97 (DQ164904) | KUW97-03 | 639 | 570 | 0 | 89.20 | 10.80 | ME-SA | Ind-2001a |
| 10 | O/BHU/3/2009 (KM921814) | BHU09-03 | 639 | 563 | 0 | 88.11 | 11.89 | ME-SA | Ind-2001d |

nt, nucleotides

*, not a WRLFMD reference number

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|--|--|
| Serotype: O | Report date: 13/02/2016 |
| WRLFMD Ref No: IRN/26/2015 | Reported by: N.J. Knowles |
| Batch No: WRLFMD/2015/00031 | Checked by: D.P. King |
| Sender Ref: IR-94-26 | |
| Location: Qom, Iran | Topotype: ME-SA |
| Date collected: 03/11/2015 | Genotype/strain: PanAsia-2 ^{BAL-09} |
| Date received by WRLFMD: 20/11/2015 | Sequence filename: IRN15-26.SEQ |
| Date received for sequencing: 11/02/2016 | Date sequence last updated: 13/02/2016 |
| Species: Sheep | No. of Nt determined: 639 |
| Material used: BTY1 29/01/2016 | No. of ambiguities: 0 |
| Region sequenced: VP1 | Gene length: 639 |
| RT-PCR primers: O-1C244F/EUR-2B52R | Total no. of comparisons: 4208 |
| O-1C272F/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 | O/IRN/6/2015 | IRN15-06 | 639 | 638 | 0 | 99.84 | 0.16 | ME-SA | PanAsia-2 ^{BAL-09} |
| 2 | O/IRN/15/2015 | IRN15-15 | 639 | 636 | 0 | 99.53 | 0.47 | ME-SA | PanAsia-2 ^{BAL-09} |
| 3 | O/IRN/16/2015 | IRN15-16 | 639 | 636 | 0 | 99.53 | 0.47 | ME-SA | PanAsia-2 ^{BAL-09} |
| 4 | O/AFG/109/2010 | AFG10109 | 639 | 609 | 0 | 95.31 | 4.69 | ME-SA | PanAsia-2 ^{BAL-09} |
| 5 | O/AFG/12/2010 | AFG10-12 | 639 | 609 | 0 | 95.31 | 4.69 | ME-SA | PanAsia-2 ^{BAL-09} |
| 6 | O/AFG/19/2010 | AFG10-19 | 639 | 609 | 0 | 95.31 | 4.69 | ME-SA | PanAsia-2 ^{BAL-09} |
| 7 | O/AFG/21/2010 | AFG10-21 | 639 | 609 | 0 | 95.31 | 4.69 | ME-SA | PanAsia-2 ^{BAL-09} |
| 8 | O/AFG/22/2009 | AFG09-22 | 639 | 609 | 0 | 95.31 | 4.69 | ME-SA | PanAsia-2 ^{BAL-09} |
| 9 | O/AFG/22/2010 | AFG10-22 | 639 | 609 | 0 | 95.31 | 4.69 | ME-SA | PanAsia-2 ^{BAL-09} |
| 10 | O/AFG/23/2010 | AFG10-23 | 639 | 609 | 0 | 95.31 | 4.69 | ME-SA | PanAsia-2 ^{BAL-09} |
| 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/IRN/18/2010 | IRN10-18 | 639 | 607 | 0 | 94.99 | 5.01 | ME-SA | PanAsia-2 ^{BAL-09} |
| 2 | O/IRN/31/2009 | IRN09-31 | 639 | 596 | 0 | 93.27 | 6.73 | ME-SA | PanAsia-2 ^{FAR-09} |
| 3 | O/IRN/8/2005 | IRN05-08 | 639 | 591 | 0 | 92.49 | 7.51 | ME-SA | PanAsia-2 |
| 4 | O/IRN/88/2009 | IRN09-88 | 639 | 589 | 0 | 92.18 | 7.82 | ME-SA | PanAsia-2 ^{ANT-10} |
| 5 | O/TUR/257/2008* (FMDI) | TUR08-AD | 639 | 589 | 0 | 92.18 | 7.82 | ME-SA | PanAsia-2 ^{TER-08} |
| 6 | O/PAK/16/2010 | PAK10-16 | 639 | 586 | 0 | 91.71 | 8.29 | ME-SA | PanAsia-2 ^{PUN-10} |
| 7 | O/TUR/264/2009* (FMDI) | TUR09-AK | 639 | 584 | 0 | 91.39 | 8.61 | ME-SA | PanAsia-2 ^{SAN-09} |
| 8 | O/UKG/35/2001 (AJ539141) | UKG01-35 | 639 | 579 | 0 | 90.61 | 9.39 | ME-SA | PanAsia |
| 9 | O/KUW/3/97 (DQ164904) | KUW97-03 | 639 | 571 | 0 | 89.36 | 10.64 | ME-SA | Ind-2001a |
| 10 | O/OMN/7/2001 (DQ164941) | OMN01-07 | 639 | 563 | 0 | 88.11 | 11.89 | ME-SA | Ind-2001b |

nt, nucleotides

*, not a WRLFMD reference number

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