

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

## Genotyping Report

Report Date for this Batch: 8 May 2014

FMDV type Asia 1

Country: Turkey

Period: 2014

No. of samples: 2

BATCH: WRLFMD/2014/00012



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# FAO World Reference Laboratory for FMD Genotyping Report

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|   |  |
|---|--|
| Serotype: ASIA1                             | Report date: 03/05/2014                |
| WRLFMD Ref No: TUR/6/2014                   | Reported by: N.J. Knowles              |
| Batch No: WRLFMD/2014/00012                 | Checked by: K. Bachanek-Bankowska      |
| Sender Ref: 0018                            |  |
| Location: Karayusufl, Seyhan, Adana, Turkey | Topotype: ASIA                         |
| Date collected: 14/01/2014                  | Genotype/strain: Sindh-08              |
| Date received by WRLFMD: 21/03/2014         | Sequence filename: TUR14-06.SEQ        |
| Date received for sequencing: 11/04/2014    | Date sequence last updated: 24/04/2014 |
| Species: Cattle                             | No. of Nt determined: 633              |
| Material used: BTy1 04/04/2014              | No. of ambiguities: 0                  |
| Region sequenced: VP1                       | Gene length: 633                       |
| RT-PCR primers: As1-1C530F/EUR-2B52R        | Total no. of comparisons: 525          |
| As1-1C613F/EUR-2B52R                        | Min. no. of nt for comparison: 600     |
|   | Total turn-around time: 43 days        |
|   | Sequencing time: 22 days               |
| Comments:                                   |  |

| <b>Most Closely Related Viruses</b>  |                                |          |              |               |               |       |         |          |           |
|--|--------------------------------|----------|--------------|---------------|---------------|-------|---------|----------|-----------|
| Pos.   | Virus name                     | Filename | No. nt comp. | No. nt match. | No. of ambig. | % Id. | % Diff. | Topotype | Strain    |
| 1  | Asia1/TUR/49/2011              | TUR11-49 | 633          | 614           | 0             | 97.00 | 3.00    | ASIA     | Sindh-08  |
| 2  | Asia1/TUR/50/2011              | TUR11-50 | 633          | 614           | 0             | 97.00 | 3.00    | ASIA     | Sindh-08  |
| 3  | Asia1/TUR/68/2011              | TUR11-68 | 633          | 614           | 0             | 97.00 | 3.00    | ASIA     | Sindh-08  |
| 4  | Asia1/IRN 3903/2012*           | IRN12-AG | 630          | 611           | 0             | 96.98 | 3.02    | ASIA     | Sindh-08  |
| 5  | Asia1/AFG/48/2011              | AFG11-48 | 633          | 613           | 0             | 96.84 | 3.16    | ASIA     | Sindh-08  |
| 6  | Asia1/AFG/51/2011              | AFG11-51 | 633          | 613           | 0             | 96.84 | 3.16    | ASIA     | Sindh-08  |
| 7  | Asia1/AFG/55/2011              | AFG11-55 | 633          | 613           | 0             | 96.84 | 3.16    | ASIA     | Sindh-08  |
| 8  | Asia1/AFG/66/2011              | AFG11-66 | 633          | 613           | 0             | 96.84 | 3.16    | ASIA     | Sindh-08  |
| 9  | Asia1/AFG/68/2011              | AFG11-68 | 633          | 613           | 0             | 96.84 | 3.16    | ASIA     | Sindh-08  |
| 10   | Asia1/AFG/73/2011              | AFG11-73 | 633          | 613           | 0             | 96.84 | 3.16    | ASIA     | Sindh-08  |
| <b>Most Closely Related Reference Viruses</b>  |                                |          |              |               |               |       |         |          |           |
| (see <a href="http://www.wrlfmd.org/fmd_genotyping/prototypes.htm">http://www.wrlfmd.org/fmd_genotyping/prototypes.htm</a> ) |                                |          |              |               |               |       |         |          |           |
| 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          | 599           | 0             | 94.63 | 5.37    | ASIA     | Sindh-08  |
| 2  | Asia1/AFG/1/2001 (DQ121109)    | AFG01-01 | 633          | 569           | 0             | 89.89 | 10.11   | ASIA     | Group I   |
| 3  | Asia1/IND/762/2003* (DQ101240) | IND03-AB | 633          | 535           | 0             | 84.52 | 15.48   | ASIA     | Group III |
| 4  | Asia1/IND/18/80 (DQ121116)     | IND80-18 | 633          | 532           | 0             | 84.04 | 15.96   | ASIA     | Group V   |
| 5  | Asia1/YNBS/CHA/58 (AY390432)   | CHA58-AA | 633          | 532           | 0             | 84.04 | 15.96   | ASIA     | Unnamed   |
| 6  | Asia1/IND/63/72* (AY304994)    | IND72C63 | 630          | 529           | 0             | 83.97 | 16.03   | ASIA     | Unnamed   |
| 7  | Asia1/Shamir/ISR/89            | ISR89--A | 633          | 527           | 0             | 83.25 | 16.75   | ASIA     | Unnamed   |
| 8  | Asia1/IND/14/95* (AF390678)    | IND95-AA | 633          | 526           | 0             | 83.10 | 16.90   | ASIA     | Unnamed   |
| 9  | Asia1/HKN/19/74                | HKN74-19 | 633          | 522           | 0             | 82.46 | 17.54   | ASIA     | Unnamed   |
| 10   | Asia1/IRN/10/2004 (DQ121119)   | IRN04-10 | 633          | 521           | 0             | 82.31 | 17.69   | ASIA     | Group VIb |

nt, nucleotides

\*, not a WRLFMD reference number

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|  |  |
|--|--|
| Serotype: ASIA1                          | Report date: 03/05/2014                |
| WRLFMD Ref No: TUR/23/2014               | Reported by: N.J. Knowles              |
| Batch No: WRLFMD/2014/00012              | Checked by: K. Bachanek-Bankowska      |
| Sender Ref: 0118                         |  |
| Location: Karakoy, Varto, Mus, Turkey    | Topotype: ASIA                         |
| Date collected: 27/02/2014               | Genotype/strain: Sindh-08              |
| Date received by WRLFMD: 21/03/2014      | Sequence filename: TUR14-23.SEQ        |
| Date received for sequencing: 28/04/2014 | Date sequence last updated: 02/05/2014 |
| Species: Cattle                          | No. of Nt determined: 633              |
| Material used: BTy1 12/04/2014           | No. of ambiguities: 0                  |
| Region sequenced: VP1                    | Gene length: 633                       |
| RT-PCR primers: As1-1C530F/EUR-2B52R     | Total no. of comparisons: 525          |
| As1-1C613F/EUR-2B52R                     | Min. no. of nt for comparison: 600     |
|  | Total turn-around time: 43 days        |
|  | Sequencing time: 5 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/2/2013               | TUR13-02 | 633          | 624           | 0             | 98.58 | 1.42    | ASIA     | Sindh-08  |
| 2  | Asia1/TUR/1/2012               | TUR12-01 | 633          | 614           | 0             | 97.00 | 3.00    | ASIA     | Sindh-08  |
| 3  | Asia1/IRN/58/2011              | IRN11-58 | 633          | 613           | 0             | 96.84 | 3.16    | ASIA     | Sindh-08  |
| 4  | Asia1/IRN/60/2011              | IRN11-60 | 633          | 613           | 0             | 96.84 | 3.16    | ASIA     | Sindh-08  |
| 5  | Asia1/IRN 1/2012*              | IRN12-AE | 633          | 613           | 0             | 96.84 | 3.16    | ASIA     | Sindh-08  |
| 6  | Asia1/TUR/76/2011              | TUR11-76 | 633          | 613           | 0             | 96.84 | 3.16    | ASIA     | Sindh-08  |
| 7  | Asia1/IRN 5428/2012*           | IRN12-AH | 630          | 610           | 0             | 96.83 | 3.17    | ASIA     | Sindh-08  |
| 8  | Asia1/IRN/1/2012               | IRN12-01 | 633          | 612           | 0             | 96.68 | 3.32    | ASIA     | Sindh-08  |
| 9  | Asia1/IRN/59/2011              | IRN11-59 | 633          | 612           | 0             | 96.68 | 3.32    | ASIA     | Sindh-08  |
| 10   | Asia1/IRN/67/2011              | IRN11-67 | 633          | 612           | 0             | 96.68 | 3.32    | ASIA     | Sindh-08  |
| Most Closely Related Reference Viruses   |                                |          |              |               |               |       |         |          |           |
| (see <a href="http://www.wrlfmd.org/fmd_genotyping/prototypes.htm">http://www.wrlfmd.org/fmd_genotyping/prototypes.htm</a> ) |                                |          |              |               |               |       |         |          |           |
| 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          | 594           | 0             | 93.84 | 6.16    | ASIA     | Sindh-08  |
| 2  | Asia1/AFG/1/2001 (DQ121109)    | AFG01-01 | 633          | 569           | 0             | 89.89 | 10.11   | ASIA     | Group I   |
| 3  | Asia1/IND/762/2003* (DQ101240) | IND03-AB | 633          | 538           | 0             | 84.99 | 15.01   | ASIA     | Group III |
| 4  | Asia1/IND/18/80 (DQ121116)     | IND80-18 | 633          | 533           | 0             | 84.20 | 15.80   | ASIA     | Group V   |
| 5  | Asia1/HKN/19/74                | HKN74-19 | 633          | 529           | 0             | 83.57 | 16.43   | ASIA     | Unnamed   |
| 6  | Asia1/IND/14/95* (AF390678)    | IND95-AA | 633          | 529           | 0             | 83.57 | 16.43   | ASIA     | Unnamed   |
| 7  | Asia1/Shamir/ISR/89            | ISR89--A | 633          | 529           | 0             | 83.57 | 16.43   | ASIA     | Unnamed   |
| 8  | Asia1/IND/63/72* (AY304994)    | IND72C63 | 630          | 525           | 0             | 83.33 | 16.67   | ASIA     | Unnamed   |
| 9  | Asia1/YNBS/CHA/58 (AY390432)   | CHA58-AA | 633          | 524           | 0             | 82.78 | 17.22   | ASIA     | Unnamed   |
| 10   | Asia1/IRN/10/2004 (DQ121119)   | IRN04-10 | 633          | 520           | 0             | 82.15 | 17.85   | ASIA     | Group VIb |

nt, nucleotides

\*, not a WRLFMD reference number

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# Report on FMDV Asia 1 in Turkey in 2014

Batch: WRLFMD/2014/00012

◆ 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

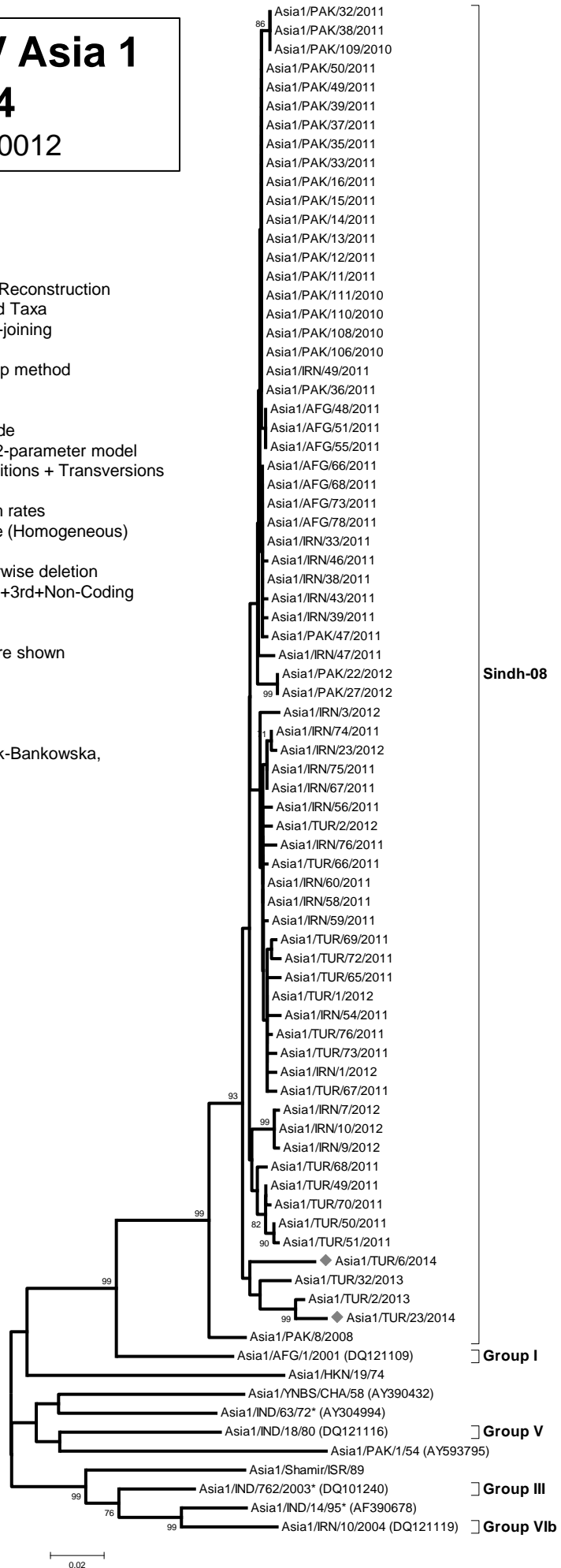
Only bootstrap values of 70% and above are shown

\*, not a WRLFMD Ref. No.

N.J. Knowles, J. Wadsworth & K. Bachanek-Bankowska,  
08 May 2014

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Sindh-08

Group I

Group V

Group III

Group VIb