

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

Genotyping Report

Report Date for this Batch: 13 December 2013

FMDV type A

Country: Pakistan

Period: 2012-2013

No. of samples: 20

BATCH: WRLFMD/2013/00024

An additional sample, A/PAK/18/2013, appeared to be a mixture of two or more FMD type A viruses and the VP1 sequence could not be determined.



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Serotype: A WRLFMD Ref No: PAK/43/2012 Batch No: WRLFMD/2013/00024 Sender Ref: FMD-466 Location: Gujrat district, Punjab province, Pakistan Date collected: 28/09/2012 Date received by WRLFMD: 07/11/2013 Date received for sequencing: 03/12/2013 Species: Water Buffalo Material used: BTy1 12/11/2013 Region sequenced: VP1 RT-PCR primers: A-1C562F/EUR-2B52R A-1C612F/EUR-2B52R	Report date: 13/12/2013 Reported by: N.J. Knowles Checked by: K. Bachanek-Bankowska Topotype: ASIA Genotype/strain: Iran-05 ^{SIS-12} Sequence filename: PAK12-43.SEQ Date sequence last updated: 05/12/2013 No. of Nt determined: 639 No. of ambiguities: 0 Gene length: 639 Total no. of comparisons: 1806 Min. no. of nt for comparison: 600 Total turn-around time: 36 days Sequencing time: 10 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/IRN/15/2012	IRN12-15	639	639	0	100.00	0.00	ASIA	Iran-05 ^{SIS-12}
2	A/IRN/16/2012	IRN12-16	639	639	0	100.00	0.00	ASIA	Iran-05 ^{SIS-12}
3	A/IRN/20/2012	IRN12-20	639	639	0	100.00	0.00	ASIA	Iran-05 ^{SIS-12}
4	A/PAK/38/2012	PAK12-38	639	639	0	100.00	0.00	ASIA	Iran-05 ^{SIS-12}
5	A/IRN/25/2012	IRN12-25	639	638	0	99.84	0.16	ASIA	Iran-05 ^{SIS-12}
6	A/IRN/35/2012	IRN12-35	639	638	0	99.84	0.16	ASIA	Iran-05 ^{SIS-12}
7	A/PAK/39/2012	PAK12-39	639	638	0	99.84	0.16	ASIA	Iran-05 ^{SIS-12}
8	A/IRN/s-002/2013 (IVO)	IRN13S02	639	637	0	99.69	0.31	ASIA	Iran-05 ^{SIS-12}
9	A/PAK/2/2013	PAK13-02	639	637	0	99.69	0.31	ASIA	Iran-05 ^{SIS-12}
10	A/PAK/47/2012	PAK12-47	639	637	0	99.69	0.31	ASIA	Iran-05 ^{SIS-12}
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/IRN/15/2012	IRN12-15	639	639	0	100.00	0.00	ASIA	Iran-05 ^{SIS-12}
2	A/AFG/6/2007 (FJ755007)	AFG07-06	639	608	0	95.15	4.85	ASIA	Iran-05 ^{AFG-07}
3	A/AFG/10/2010	AFG10-10	639	606	0	94.84	5.16	ASIA	Iran-05 ^{HER-10}
4	A/IRN/78/2009	IRN09-78	639	604	0	94.52	5.48	ASIA	Iran-05 ^{FAR-09}
5	A/IRN/1/2005 (EF208769)	IRN05-01	639	603	0	94.37	5.63	ASIA	Iran-05
6	A/IRN/1/2011	IRN11-01	639	603	0	94.37	5.63	ASIA	Iran-05 ^{FAR-11}
7	A/BAR/6/2008 (FJ755010)	BAR08-06	639	598	0	93.58	6.42	ASIA	Iran-05 ^{BAR-08}
8	A/TUR/33/2008 (FJ755155)	TUR08-33	639	596	0	93.27	6.73	ASIA	Iran-05 ^{EZM-07}
9	A/IRN/125/2010	IRN10125	639	594	0	92.96	7.04	ASIA	Iran-05 ^{SIS-10}
10	A/TUR/1/2008 (FJ755133)	TUR08-01	639	594	0	92.96	7.04	ASIA	Iran-05 ^{ARD-07}

nt, nucleotides

*, not a WRLFMD reference number

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Serotype: A WRLFMD Ref No: PAK/47/2012 Batch No: WRLFMD/2013/00024 Sender Ref: FMD -622 Location: Mirpur District, Azad Jammu and Kashmir, Pakistan Date collected: 08/11/2012 Date received by WRLFMD: 07/11/2013 Date received for sequencing: 03/12/2013 Species: Cattle Material used: BTy1 12/11/2013 Region sequenced: VP1 RT-PCR primers: A-1C562F/EUR-2B52R A-1C612F/EUR-2B52R	Report date: 13/12/2013 Reported by: N.J. Knowles Checked by: K. Bachanek-Bankowska Topotype: ASIA Genotype/strain: Iran-05 ^{SIS-12} Sequence filename: PAK12-47.SEQ Date sequence last updated: 05/12/2013 No. of Nt determined: 639 No. of ambiguities: 0 Gene length: 639 Total no. of comparisons: 1806 Min. no. of nt for comparison: 600 Total turn-around time: 36 days Sequencing time: 10 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/IRN/15/2012	IRN12-15	639	637	0	99.69	0.31	ASIA	Iran-05 ^{SIS-12}
2	A/IRN/16/2012	IRN12-16	639	637	0	99.69	0.31	ASIA	Iran-05 ^{SIS-12}
3	A/IRN/20/2012	IRN12-20	639	637	0	99.69	0.31	ASIA	Iran-05 ^{SIS-12}
4	A/PAK/38/2012	PAK12-38	639	637	0	99.69	0.31	ASIA	Iran-05 ^{SIS-12}
5	A/PAK/43/2012	PAK12-43	639	637	0	99.69	0.31	ASIA	Iran-05 ^{SIS-12}
6	A/IRN/25/2012	IRN12-25	639	636	0	99.53	0.47	ASIA	Iran-05 ^{SIS-12}
7	A/IRN/35/2012	IRN12-35	639	636	0	99.53	0.47	ASIA	Iran-05 ^{SIS-12}
8	A/PAK/39/2012	PAK12-39	639	636	0	99.53	0.47	ASIA	Iran-05 ^{SIS-12}
9	A/IRN/s-002/2013 (IVO)	IRN13S02	639	635	0	99.37	0.63	ASIA	Iran-05 ^{SIS-12}
10	A/PAK/2/2013	PAK13-02	639	635	0	99.37	0.63	ASIA	Iran-05 ^{SIS-12}
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/IRN/15/2012	IRN12-15	639	637	0	99.69	0.31	ASIA	Iran-05 ^{SIS-12}
2	A/AFG/6/2007 (FJ755007)	AFG07-06	639	608	0	95.15	4.85	ASIA	Iran-05 ^{AFG-07}
3	A/AFG/10/2010	AFG10-10	639	606	0	94.84	5.16	ASIA	Iran-05 ^{HER-10}
4	A/IRN/78/2009	IRN09-78	639	604	0	94.52	5.48	ASIA	Iran-05 ^{FAR-09}
5	A/IRN/1/2005 (EF208769)	IRN05-01	639	603	0	94.37	5.63	ASIA	Iran-05
6	A/IRN/1/2011	IRN11-01	639	603	0	94.37	5.63	ASIA	Iran-05 ^{FAR-11}
7	A/BAR/6/2008 (FJ755010)	BAR08-06	639	598	0	93.58	6.42	ASIA	Iran-05 ^{BAR-08}
8	A/TUR/33/2008 (FJ755155)	TUR08-33	639	596	0	93.27	6.73	ASIA	Iran-05 ^{EZM-07}
9	A/TUR/1/2008 (FJ755133)	TUR08-01	639	594	0	92.96	7.04	ASIA	Iran-05 ^{ARD-07}
10	A/IRN/125/2010	IRN10125	639	592	0	92.64	7.36	ASIA	Iran-05 ^{SIS-10}

nt, nucleotides

*, not a WRLFMD reference number

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Serotype: A WRLFMD Ref No: PAK/48/2012 Batch No: WRLFMD/2013/00024 Sender Ref: FMD-628 Location: Azad Jammu and Kashmir, Pakistan Date collected: 10/11/2012 Date received by WRLFMD: 07/11/2013 Date received for sequencing: 03/12/2013 Species: Cattle Material used: BTy1 12/11/2013 Region sequenced: VP1 RT-PCR primers: A-1C562F/EUR-2B52R A-1C612F/EUR-2B52R	Report date: 13/12/2013 Reported by: N.J. Knowles Checked by: K. Bachanek-Bankowska Topotype: ASIA Genotype/strain: Iran-05 ^{FAR-11} Sequence filename: PAK12-48.SEQ Date sequence last updated: 05/12/2013 No. of Nt determined: 639 No. of ambiguities: 0 Gene length: 639 Total no. of comparisons: 1806 Min. no. of nt for comparison: 600 Total turn-around time: 36 days Sequencing time: 10 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/PAK/1/2013	PAK13-01	639	639	0	100.00	0.00	ASIA	Iran-05 ^{FAR-11}
2	A/PAK/11/2013	PAK13-11	639	637	0	99.69	0.31	ASIA	Iran-05 ^{FAR-11}
3	A/PAK/13/2013	PAK13-13	639	637	0	99.69	0.31	ASIA	Iran-05 ^{FAR-11}
4	A/PAK/14/2013	PAK13-14	639	637	0	99.69	0.31	ASIA	Iran-05 ^{FAR-11}
5	A/PAK/17/2013	PAK13-17	639	636	0	99.53	0.47	ASIA	Iran-05 ^{FAR-11}
6	A/PAK/19/2013	PAK13-19	639	636	0	99.53	0.47	ASIA	Iran-05 ^{FAR-11}
7	A/PAK/21/2013	PAK13-21	639	636	0	99.53	0.47	ASIA	Iran-05 ^{FAR-11}
8	A/PAK/25/2013	PAK13-25	639	636	0	99.53	0.47	ASIA	Iran-05 ^{FAR-11}
9	A/PAK/8/2013	PAK13-08	639	636	0	99.53	0.47	ASIA	Iran-05 ^{FAR-11}
10	A/PAK/5/2013	PAK13-05	639	635	0	99.37	0.63	ASIA	Iran-05 ^{FAR-11}
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/IRN/1/2011	IRN11-01	639	629	0	98.44	1.56	ASIA	Iran-05 ^{FAR-11}
2	A/AFG/6/2007 (FJ755007)	AFG07-06	639	605	0	94.68	5.32	ASIA	Iran-05 ^{AFG-07}
3	A/IRN/78/2009	IRN09-78	639	601	0	94.05	5.95	ASIA	Iran-05 ^{FAR-09}
4	A/AFG/10/2010	AFG10-10	639	600	0	93.90	6.10	ASIA	Iran-05 ^{HER-10}
5	A/IRN/15/2012	IRN12-15	639	600	0	93.90	6.10	ASIA	Iran-05 ^{SIS-12}
6	A/IRN/1/2005 (EF208769)	IRN05-01	639	595	0	93.11	6.89	ASIA	Iran-05
7	A/TUR/1/2008 (FJ755133)	TUR08-01	639	595	0	93.11	6.89	ASIA	Iran-05 ^{ARD-07}
8	A/BAR/6/2008 (FJ755010)	BAR08-06	639	591	0	92.49	7.51	ASIA	Iran-05 ^{BAR-08}
9	A/IRN/125/2010	IRN10125	639	590	0	92.33	7.67	ASIA	Iran-05 ^{SIS-10}
10	A/IRN/9/2010	IRN10-09	639	587	0	91.86	8.14	ASIA	Iran-05 ^{ESF-10}

nt, nucleotides

*, not a WRLFMD reference number

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Serotype: A WRLFMD Ref No: PAK/49/2012 Batch No: WRLFMD/2013/00024 Sender Ref: FMD-520 Location: Okara district, Punjab province, Pakistan Date collected: 12/11/2012 Date received by WRLFMD: 07/11/2013 Date received for sequencing: 03/12/2013 Species: Water Buffalo Material used: BTy1 12/11/2013 Region sequenced: VP1 RT-PCR primers: A-1C562F/EUR-2B52R A-1C612F/EUR-2B52R	Report date: 13/12/2013 Reported by: N.J. Knowles Checked by: K. Bachanek-Bankowska Topotype: ASIA Genotype/strain: Iran-05 ^{SIS-12} Sequence filename: PAK12-49.SEQ Date sequence last updated: 05/12/2013 No. of Nt determined: 639 No. of ambiguities: 0 Gene length: 639 Total no. of comparisons: 1806 Min. no. of nt for comparison: 600 Total turn-around time: 36 days Sequencing time: 10 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/PAK/56/2012	PAK12-56	639	638	0	99.84	0.16	ASIA	Iran-05 ^{SIS-12}
2	A/IRN/15/2012	IRN12-15	639	637	0	99.69	0.31	ASIA	Iran-05 ^{SIS-12}
3	A/IRN/16/2012	IRN12-16	639	637	0	99.69	0.31	ASIA	Iran-05 ^{SIS-12}
4	A/IRN/20/2012	IRN12-20	639	637	0	99.69	0.31	ASIA	Iran-05 ^{SIS-12}
5	A/PAK/38/2012	PAK12-38	639	637	0	99.69	0.31	ASIA	Iran-05 ^{SIS-12}
6	A/PAK/43/2012	PAK12-43	639	637	0	99.69	0.31	ASIA	Iran-05 ^{SIS-12}
7	A/PAK/50/2012	PAK12-50	639	637	0	99.69	0.31	ASIA	Iran-05 ^{SIS-12}
8	A/PAK/52/2012	PAK12-52	639	637	0	99.69	0.31	ASIA	Iran-05 ^{SIS-12}
9	A/IRN/25/2012	IRN12-25	639	636	0	99.53	0.47	ASIA	Iran-05 ^{SIS-12}
10	A/IRN/30/2012	IRN12-30	639	636	0	99.53	0.47	ASIA	Iran-05 ^{SIS-12}
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/IRN/15/2012	IRN12-15	639	637	0	99.69	0.31	ASIA	Iran-05 ^{SIS-12}
2	A/AFG/6/2007 (FJ755007)	AFG07-06	639	608	0	95.15	4.85	ASIA	Iran-05 ^{AFG-07}
3	A/AFG/10/2010	AFG10-10	639	606	0	94.84	5.16	ASIA	Iran-05 ^{HER-10}
4	A/IRN/78/2009	IRN09-78	639	604	0	94.52	5.48	ASIA	Iran-05 ^{FAR-09}
5	A/IRN/1/2005 (EF208769)	IRN05-01	639	603	0	94.37	5.63	ASIA	Iran-05
6	A/IRN/1/2011	IRN11-01	639	601	0	94.05	5.95	ASIA	Iran-05 ^{FAR-11}
7	A/BAR/6/2008 (FJ755010)	BAR08-06	639	598	0	93.58	6.42	ASIA	Iran-05 ^{BAR-08}
8	A/TUR/33/2008 (FJ755155)	TUR08-33	639	596	0	93.27	6.73	ASIA	Iran-05 ^{EZM-07}
9	A/IRN/125/2010	IRN10125	639	594	0	92.96	7.04	ASIA	Iran-05 ^{SIS-10}
10	A/TUR/1/2008 (FJ755133)	TUR08-01	639	594	0	92.96	7.04	ASIA	Iran-05 ^{ARD-07}

nt, nucleotides

*, not a WRLFMD reference number

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Serotype: A WRLFMD Ref No: PAK/50/2012 Batch No: WRLFMD/2013/00024 Sender Ref: FMD-604 Location: Sialkot district, Punjab province, Pakistan Date collected: 22/11/2012 Date received by WRLFMD: 07/11/2013 Date received for sequencing: 03/12/2013 Species: Water Buffalo Material used: BTy1 13/11/2013 Region sequenced: VP1 RT-PCR primers: A-1C562F/EUR-2B52R A-1C612F/EUR-2B52R	Report date: 13/12/2013 Reported by: N.J. Knowles Checked by: K. Bachanek-Bankowska Topotype: ASIA Genotype/strain: Iran-05 ^{SIS-12} Sequence filename: PAK12-50.SEQ Date sequence last updated: 05/12/2013 No. of Nt determined: 639 No. of ambiguities: 0 Gene length: 639 Total no. of comparisons: 1806 Min. no. of nt for comparison: 600 Total turn-around time: 36 days Sequencing time: 10 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/PAK/52/2012	PAK12-52	639	639	0	100.00	0.00	ASIA	Iran-05 ^{SIS-12}
2	A/PAK/49/2012	PAK12-49	639	637	0	99.69	0.31	ASIA	Iran-05 ^{SIS-12}
3	A/PAK/56/2012	PAK12-56	639	636	0	99.53	0.47	ASIA	Iran-05 ^{SIS-12}
4	A/IRN/15/2012	IRN12-15	639	635	0	99.37	0.63	ASIA	Iran-05 ^{SIS-12}
5	A/IRN/16/2012	IRN12-16	639	635	0	99.37	0.63	ASIA	Iran-05 ^{SIS-12}
6	A/IRN/20/2012	IRN12-20	639	635	0	99.37	0.63	ASIA	Iran-05 ^{SIS-12}
7	A/PAK/38/2012	PAK12-38	639	635	0	99.37	0.63	ASIA	Iran-05 ^{SIS-12}
8	A/PAK/43/2012	PAK12-43	639	635	0	99.37	0.63	ASIA	Iran-05 ^{SIS-12}
9	A/IRN/25/2012	IRN12-25	639	634	0	99.22	0.78	ASIA	Iran-05 ^{SIS-12}
10	A/IRN/30/2012	IRN12-30	639	634	0	99.22	0.78	ASIA	Iran-05 ^{SIS-12}
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/IRN/15/2012	IRN12-15	639	635	0	99.37	0.63	ASIA	Iran-05 ^{SIS-12}
2	A/AFG/6/2007 (FJ755007)	AFG07-06	639	606	0	94.84	5.16	ASIA	Iran-05 ^{AFG-07}
3	A/AFG/10/2010	AFG10-10	639	604	0	94.52	5.48	ASIA	Iran-05 ^{HER-10}
4	A/IRN/78/2009	IRN09-78	639	602	0	94.21	5.79	ASIA	Iran-05 ^{FAR-09}
5	A/IRN/1/2005 (EF208769)	IRN05-01	639	601	0	94.05	5.95	ASIA	Iran-05
6	A/IRN/1/2011	IRN11-01	639	599	0	93.74	6.26	ASIA	Iran-05 ^{FAR-11}
7	A/BAR/6/2008 (FJ755010)	BAR08-06	639	596	0	93.27	6.73	ASIA	Iran-05 ^{BAR-08}
8	A/TUR/33/2008 (FJ755155)	TUR08-33	639	594	0	92.96	7.04	ASIA	Iran-05 ^{EZM-07}
9	A/IRN/125/2010	IRN10125	639	592	0	92.64	7.36	ASIA	Iran-05 ^{SIS-10}
10	A/TUR/1/2008 (FJ755133)	TUR08-01	639	592	0	92.64	7.36	ASIA	Iran-05 ^{ARD-07}

nt, nucleotides

*, not a WRLFMD reference number

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Serotype: A WRLFMD Ref No: PAK/52/2012 Batch No: WRLFMD/2013/00024 Sender Ref: FMD-635 Location: Jhang district, Punjab province, Pakistan Date collected: 11/12/2012 Date received by WRLFMD: 07/11/2013 Date received for sequencing: 03/12/2013 Species: Water Buffalo Material used: BTy1 13/11/2013 Region sequenced: VP1 RT-PCR primers: A-1C562F/EUR-2B52R A-1C612F/EUR-2B52R	Report date: 13/12/2013 Reported by: N.J. Knowles Checked by: K. Bachanek-Bankowska Topotype: ASIA Genotype/strain: Iran-05 ^{SIS-12} Sequence filename: PAK12-52.SEQ Date sequence last updated: 05/12/2013 No. of Nt determined: 639 No. of ambiguities: 0 Gene length: 639 Total no. of comparisons: 1806 Min. no. of nt for comparison: 600 Total turn-around time: 36 days Sequencing time: 10 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/PAK/50/2012	PAK12-50	639	639	0	100.00	0.00	ASIA	Iran-05 ^{SIS-12}
2	A/PAK/49/2012	PAK12-49	639	637	0	99.69	0.31	ASIA	Iran-05 ^{SIS-12}
3	A/PAK/56/2012	PAK12-56	639	636	0	99.53	0.47	ASIA	Iran-05 ^{SIS-12}
4	A/IRN/15/2012	IRN12-15	639	635	0	99.37	0.63	ASIA	Iran-05 ^{SIS-12}
5	A/IRN/16/2012	IRN12-16	639	635	0	99.37	0.63	ASIA	Iran-05 ^{SIS-12}
6	A/IRN/20/2012	IRN12-20	639	635	0	99.37	0.63	ASIA	Iran-05 ^{SIS-12}
7	A/PAK/38/2012	PAK12-38	639	635	0	99.37	0.63	ASIA	Iran-05 ^{SIS-12}
8	A/PAK/43/2012	PAK12-43	639	635	0	99.37	0.63	ASIA	Iran-05 ^{SIS-12}
9	A/IRN/25/2012	IRN12-25	639	634	0	99.22	0.78	ASIA	Iran-05 ^{SIS-12}
10	A/IRN/30/2012	IRN12-30	639	634	0	99.22	0.78	ASIA	Iran-05 ^{SIS-12}
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/IRN/15/2012	IRN12-15	639	635	0	99.37	0.63	ASIA	Iran-05 ^{SIS-12}
2	A/AFG/6/2007 (FJ755007)	AFG07-06	639	606	0	94.84	5.16	ASIA	Iran-05 ^{AFG-07}
3	A/AFG/10/2010	AFG10-10	639	604	0	94.52	5.48	ASIA	Iran-05 ^{HER-10}
4	A/IRN/78/2009	IRN09-78	639	602	0	94.21	5.79	ASIA	Iran-05 ^{FAR-09}
5	A/IRN/1/2005 (EF208769)	IRN05-01	639	601	0	94.05	5.95	ASIA	Iran-05
6	A/IRN/1/2011	IRN11-01	639	599	0	93.74	6.26	ASIA	Iran-05 ^{FAR-11}
7	A/BAR/6/2008 (FJ755010)	BAR08-06	639	596	0	93.27	6.73	ASIA	Iran-05 ^{BAR-08}
8	A/TUR/33/2008 (FJ755155)	TUR08-33	639	594	0	92.96	7.04	ASIA	Iran-05 ^{EZM-07}
9	A/IRN/125/2010	IRN10125	639	592	0	92.64	7.36	ASIA	Iran-05 ^{SIS-10}
10	A/TUR/1/2008 (FJ755133)	TUR08-01	639	592	0	92.64	7.36	ASIA	Iran-05 ^{ARD-07}

nt, nucleotides

*, not a WRLFMD reference number

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Serotype: A WRLFMD Ref No: PAK/54/2012 Batch No: WRLFMD/2013/00024 Sender Ref: FMD-699 Location: Sargodha district, Punjab province, Pakistan Date collected: 13/12/2012 Date received by WRLFMD: 07/11/2013 Date received for sequencing: 03/12/2013 Species: Cattle Material used: BTy1 14/11/2013 Region sequenced: VP1 RT-PCR primers: A-1C562F/EUR-2B52R A-1C612F/EUR-2B52R	Report date: 13/12/2013 Reported by: N.J. Knowles Checked by: K. Bachanek-Bankowska Topotype: ASIA Genotype/strain: Iran-05 ^{SIS-12} Sequence filename: PAK12-54.SEQ Date sequence last updated: 05/12/2013 No. of Nt determined: 639 No. of ambiguities: 0 Gene length: 639 Total no. of comparisons: 1806 Min. no. of nt for comparison: 600 Total turn-around time: 36 days Sequencing time: 10 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/IRN/15/2012	IRN12-15	639	637	0	99.69	0.31	ASIA	Iran-05 ^{SIS-12}
2	A/IRN/16/2012	IRN12-16	639	637	0	99.69	0.31	ASIA	Iran-05 ^{SIS-12}
3	A/IRN/20/2012	IRN12-20	639	637	0	99.69	0.31	ASIA	Iran-05 ^{SIS-12}
4	A/PAK/38/2012	PAK12-38	639	637	0	99.69	0.31	ASIA	Iran-05 ^{SIS-12}
5	A/PAK/43/2012	PAK12-43	639	637	0	99.69	0.31	ASIA	Iran-05 ^{SIS-12}
6	A/IRN/25/2012	IRN12-25	639	636	0	99.53	0.47	ASIA	Iran-05 ^{SIS-12}
7	A/IRN/35/2012	IRN12-35	639	636	0	99.53	0.47	ASIA	Iran-05 ^{SIS-12}
8	A/PAK/39/2012	PAK12-39	639	636	0	99.53	0.47	ASIA	Iran-05 ^{SIS-12}
9	A/IRN/s-002/2013 (IVO)	IRN13S02	639	635	0	99.37	0.63	ASIA	Iran-05 ^{SIS-12}
10	A/PAK/2/2013	PAK13-02	639	635	0	99.37	0.63	ASIA	Iran-05 ^{SIS-12}
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/IRN/15/2012	IRN12-15	639	637	0	99.69	0.31	ASIA	Iran-05 ^{SIS-12}
2	A/AFG/6/2007 (FJ755007)	AFG07-06	639	606	0	94.84	5.16	ASIA	Iran-05 ^{AFG-07}
3	A/AFG/10/2010	AFG10-10	639	604	0	94.52	5.48	ASIA	Iran-05 ^{HER-10}
4	A/IRN/78/2009	IRN09-78	639	602	0	94.21	5.79	ASIA	Iran-05 ^{FAR-09}
5	A/IRN/1/2005 (EF208769)	IRN05-01	639	601	0	94.05	5.95	ASIA	Iran-05
6	A/IRN/1/2011	IRN11-01	639	601	0	94.05	5.95	ASIA	Iran-05 ^{FAR-11}
7	A/BAR/6/2008 (FJ755010)	BAR08-06	639	596	0	93.27	6.73	ASIA	Iran-05 ^{BAR-08}
8	A/TUR/33/2008 (FJ755155)	TUR08-33	639	596	0	93.27	6.73	ASIA	Iran-05 ^{EZM-07}
9	A/IRN/125/2010	IRN10125	639	592	0	92.64	7.36	ASIA	Iran-05 ^{SIS-10}
10	A/TUR/1/2008 (FJ755133)	TUR08-01	639	592	0	92.64	7.36	ASIA	Iran-05 ^{ARD-07}

nt, nucleotides

*, not a WRLFMD reference number

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Serotype: A WRLFMD Ref No: PAK/56/2012 Batch No: WRLFMD/2013/00024 Sender Ref: FMD-677 Location: Sahiwal district, Punjab province, Pakistan Date collected: 19/12/2012 Date received by WRLFMD: 07/11/2013 Date received for sequencing: 03/12/2013 Species: Water Buffalo Material used: BTy1 14/11/2013 Region sequenced: VP1 RT-PCR primers: A-1C562F/EUR-2B52R A-1C612F/EUR-2B52R	Report date: 13/12/2013 Reported by: N.J. Knowles Checked by: K. Bachanek-Bankowska Topotype: ASIA Genotype/strain: Iran-05 ^{SIS-12} Sequence filename: PAK12-56.SEQ Date sequence last updated: 05/12/2013 No. of Nt determined: 639 No. of ambiguities: 0 Gene length: 639 Total no. of comparisons: 1806 Min. no. of nt for comparison: 600 Total turn-around time: 36 days Sequencing time: 10 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/PAK/49/2012	PAK12-49	639	638	0	99.84	0.16	ASIA	Iran-05 ^{SIS-12}
2	A/IRN/15/2012	IRN12-15	639	636	0	99.53	0.47	ASIA	Iran-05 ^{SIS-12}
3	A/IRN/16/2012	IRN12-16	639	636	0	99.53	0.47	ASIA	Iran-05 ^{SIS-12}
4	A/IRN/20/2012	IRN12-20	639	636	0	99.53	0.47	ASIA	Iran-05 ^{SIS-12}
5	A/PAK/38/2012	PAK12-38	639	636	0	99.53	0.47	ASIA	Iran-05 ^{SIS-12}
6	A/PAK/43/2012	PAK12-43	639	636	0	99.53	0.47	ASIA	Iran-05 ^{SIS-12}
7	A/PAK/50/2012	PAK12-50	639	636	0	99.53	0.47	ASIA	Iran-05 ^{SIS-12}
8	A/PAK/52/2012	PAK12-52	639	636	0	99.53	0.47	ASIA	Iran-05 ^{SIS-12}
9	A/IRN/25/2012	IRN12-25	639	635	0	99.37	0.63	ASIA	Iran-05 ^{SIS-12}
10	A/IRN/30/2012	IRN12-30	639	635	0	99.37	0.63	ASIA	Iran-05 ^{SIS-12}
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/IRN/15/2012	IRN12-15	639	636	0	99.53	0.47	ASIA	Iran-05 ^{SIS-12}
2	A/AFG/6/2007 (FJ755007)	AFG07-06	639	607	0	94.99	5.01	ASIA	Iran-05 ^{AFG-07}
3	A/AFG/10/2010	AFG10-10	639	605	0	94.68	5.32	ASIA	Iran-05 ^{HER-10}
4	A/IRN/78/2009	IRN09-78	639	603	0	94.37	5.63	ASIA	Iran-05 ^{FAR-09}
5	A/IRN/1/2005 (EF208769)	IRN05-01	639	602	0	94.21	5.79	ASIA	Iran-05
6	A/IRN/1/2011	IRN11-01	639	600	0	93.90	6.10	ASIA	Iran-05 ^{FAR-11}
7	A/BAR/6/2008 (FJ755010)	BAR08-06	639	597	0	93.43	6.57	ASIA	Iran-05 ^{BAR-08}
8	A/TUR/33/2008 (FJ755155)	TUR08-33	639	595	0	93.11	6.89	ASIA	Iran-05 ^{EZM-07}
9	A/IRN/125/2010	IRN10125	639	593	0	92.80	7.20	ASIA	Iran-05 ^{SIS-10}
10	A/TUR/1/2008 (FJ755133)	TUR08-01	639	593	0	92.80	7.20	ASIA	Iran-05 ^{ARD-07}

nt, nucleotides

*, not a WRLFMD reference number

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Serotype: A WRLFMD Ref No: PAK/1/2013 Batch No: WRLFMD/2013/00024 Sender Ref: FMD-813 Location: Okara district, Punjab province, Pakistan Date collected: 08/01/2013 Date received by WRLFMD: 07/11/2013 Date received for sequencing: 03/12/2013 Species: Water Buffalo Material used: BTy1 14/11/2013 Region sequenced: VP1 RT-PCR primers: A-1C562F/EUR-2B52R A-1C612F/EUR-2B52R	Report date: 13/12/2013 Reported by: N.J. Knowles Checked by: K. Bachanek-Bankowska Topotype: ASIA Genotype/strain: Iran-05 ^{FAR-11} Sequence filename: PAK13-01.SEQ Date sequence last updated: 05/12/2013 No. of Nt determined: 639 No. of ambiguities: 0 Gene length: 639 Total no. of comparisons: 1806 Min. no. of nt for comparison: 600 Total turn-around time: 36 days Sequencing time: 10 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/PAK/48/2012	PAK12-48	639	639	0	100.00	0.00	ASIA	Iran-05 ^{FAR-11}
2	A/PAK/11/2013	PAK13-11	639	637	0	99.69	0.31	ASIA	Iran-05 ^{FAR-11}
3	A/PAK/13/2013	PAK13-13	639	637	0	99.69	0.31	ASIA	Iran-05 ^{FAR-11}
4	A/PAK/14/2013	PAK13-14	639	637	0	99.69	0.31	ASIA	Iran-05 ^{FAR-11}
5	A/PAK/17/2013	PAK13-17	639	636	0	99.53	0.47	ASIA	Iran-05 ^{FAR-11}
6	A/PAK/19/2013	PAK13-19	639	636	0	99.53	0.47	ASIA	Iran-05 ^{FAR-11}
7	A/PAK/21/2013	PAK13-21	639	636	0	99.53	0.47	ASIA	Iran-05 ^{FAR-11}
8	A/PAK/25/2013	PAK13-25	639	636	0	99.53	0.47	ASIA	Iran-05 ^{FAR-11}
9	A/PAK/8/2013	PAK13-08	639	636	0	99.53	0.47	ASIA	Iran-05 ^{FAR-11}
10	A/PAK/5/2013	PAK13-05	639	635	0	99.37	0.63	ASIA	Iran-05 ^{FAR-11}
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/IRN/1/2011	IRN11-01	639	629	0	98.44	1.56	ASIA	Iran-05 ^{FAR-11}
2	A/AFG/6/2007 (FJ755007)	AFG07-06	639	605	0	94.68	5.32	ASIA	Iran-05 ^{AFG-07}
3	A/IRN/78/2009	IRN09-78	639	601	0	94.05	5.95	ASIA	Iran-05 ^{FAR-09}
4	A/AFG/10/2010	AFG10-10	639	600	0	93.90	6.10	ASIA	Iran-05 ^{HER-10}
5	A/IRN/15/2012	IRN12-15	639	600	0	93.90	6.10	ASIA	Iran-05 ^{SIS-12}
6	A/IRN/1/2005 (EF208769)	IRN05-01	639	595	0	93.11	6.89	ASIA	Iran-05
7	A/TUR/1/2008 (FJ755133)	TUR08-01	639	595	0	93.11	6.89	ASIA	Iran-05 ^{ARD-07}
8	A/BAR/6/2008 (FJ755010)	BAR08-06	639	591	0	92.49	7.51	ASIA	Iran-05 ^{BAR-08}
9	A/IRN/125/2010	IRN10125	639	590	0	92.33	7.67	ASIA	Iran-05 ^{SIS-10}
10	A/IRN/9/2010	IRN10-09	639	587	0	91.86	8.14	ASIA	Iran-05 ^{ESF-10}

nt, nucleotides

*, not a WRLFMD reference number

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Serotype: A	Report date: 13/12/2013
WRLFMD Ref No: PAK/2/2013	Reported by: N.J. Knowles
Batch No: WRLFMD/2013/00024	Checked by: K. Bachanek-Bankowska
Sender Ref: FMD-772	
Location: Quetta, Balochistan province, Pakistan	Topotype: ASIA
Date collected: 10/01/2013	Genotype/strain: Iran-05 ^{SIS-12}
Date received by WRLFMD: 07/11/2013	Sequence filename: PAK13-02.SEQ
Date received for sequencing: 03/12/2013	Date sequence last updated: 05/12/2013
Species: Cattle	No. of Nt determined: 639
Material used: BTy1 14/11/2013	No. of ambiguities: 0
Region sequenced: VP1	Gene length: 639
RT-PCR primers: A-1C562F/EUR-2B52R	Total no. of comparisons: 1806
A-1C612F/EUR-2B52R	Min. no. of nt for comparison: 600
	Total turn-around time: 36 days
	Sequencing time: 10 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/IRN/15/2012	IRN12-15	639	637	0	99.69	0.31	ASIA	Iran-05 ^{SIS-12}
2	A/IRN/16/2012	IRN12-16	639	637	0	99.69	0.31	ASIA	Iran-05 ^{SIS-12}
3	A/IRN/20/2012	IRN12-20	639	637	0	99.69	0.31	ASIA	Iran-05 ^{SIS-12}
4	A/PAK/38/2012	PAK12-38	639	637	0	99.69	0.31	ASIA	Iran-05 ^{SIS-12}
5	A/PAK/43/2012	PAK12-43	639	637	0	99.69	0.31	ASIA	Iran-05 ^{SIS-12}
6	A/IRN/25/2012	IRN12-25	639	636	0	99.53	0.47	ASIA	Iran-05 ^{SIS-12}
7	A/IRN/35/2012	IRN12-35	639	636	0	99.53	0.47	ASIA	Iran-05 ^{SIS-12}
8	A/PAK/39/2012	PAK12-39	639	636	0	99.53	0.47	ASIA	Iran-05 ^{SIS-12}
9	A/IRN/s-002/2013 (IVO)	IRN13S02	639	635	0	99.37	0.63	ASIA	Iran-05 ^{SIS-12}
10	A/PAK/47/2012	PAK12-47	639	635	0	99.37	0.63	ASIA	Iran-05 ^{SIS-12}
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/IRN/15/2012	IRN12-15	639	637	0	99.69	0.31	ASIA	Iran-05 ^{SIS-12}
2	A/AFG/6/2007 (FJ755007)	AFG07-06	639	606	0	94.84	5.16	ASIA	Iran-05 ^{AFG-07}
3	A/AFG/10/2010	AFG10-10	639	604	0	94.52	5.48	ASIA	Iran-05 ^{HER-10}
4	A/IRN/78/2009	IRN09-78	639	602	0	94.21	5.79	ASIA	Iran-05 ^{FAR-09}
5	A/IRN/1/2005 (EF208769)	IRN05-01	639	601	0	94.05	5.95	ASIA	Iran-05
6	A/IRN/1/2011	IRN11-01	639	601	0	94.05	5.95	ASIA	Iran-05 ^{FAR-11}
7	A/BAR/6/2008 (FJ755010)	BAR08-06	639	596	0	93.27	6.73	ASIA	Iran-05 ^{BAR-08}
8	A/TUR/33/2008 (FJ755155)	TUR08-33	639	594	0	92.96	7.04	ASIA	Iran-05 ^{EZM-07}
9	A/IRN/125/2010	IRN10125	639	592	0	92.64	7.36	ASIA	Iran-05 ^{SIS-10}
10	A/TUR/1/2008 (FJ755133)	TUR08-01	639	592	0	92.64	7.36	ASIA	Iran-05 ^{ARD-07}

nt, nucleotides

*, not a WRLFMD reference number

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Serotype: A WRLFMD Ref No: PAK/5/2013 Batch No: WRLFMD/2013/00024 Sender Ref: FMD-877 Location: Bhimber District, Azad Jammu and Kashmir, Pakistan Date collected: 07/02/2013 Date received by WRLFMD: 07/11/2013 Date received for sequencing: 03/12/2013 Species: Cattle Material used: BTy1 15/11/2013 Region sequenced: VP1 RT-PCR primers: A-1C562F/EUR-2B52R A-1C612F/EUR-2B52R	Report date: 13/12/2013 Reported by: N.J. Knowles Checked by: K. Bachanek-Bankowska Topotype: ASIA Genotype/strain: Iran-05 ^{FAR-11} Sequence filename: PAK13-05.SEQ Date sequence last updated: 05/12/2013 No. of Nt determined: 639 No. of ambiguities: 0 Gene length: 639 Total no. of comparisons: 1806 Min. no. of nt for comparison: 600 Total turn-around time: 36 days Sequencing time: 10 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/PAK/1/2013	PAK13-01	639	635	0	99.37	0.63	ASIA	Iran-05 ^{FAR-11}
2	A/PAK/11/2013	PAK13-11	639	635	0	99.37	0.63	ASIA	Iran-05 ^{FAR-11}
3	A/PAK/13/2013	PAK13-13	639	635	0	99.37	0.63	ASIA	Iran-05 ^{FAR-11}
4	A/PAK/14/2013	PAK13-14	639	635	0	99.37	0.63	ASIA	Iran-05 ^{FAR-11}
5	A/PAK/48/2012	PAK12-48	639	635	0	99.37	0.63	ASIA	Iran-05 ^{FAR-11}
6	A/PAK/17/2013	PAK13-17	639	634	0	99.22	0.78	ASIA	Iran-05 ^{FAR-11}
7	A/PAK/21/2013	PAK13-21	639	634	0	99.22	0.78	ASIA	Iran-05 ^{FAR-11}
8	A/PAK/25/2013	PAK13-25	639	634	0	99.22	0.78	ASIA	Iran-05 ^{FAR-11}
9	A/PAK/8/2013	PAK13-08	639	634	0	99.22	0.78	ASIA	Iran-05 ^{FAR-11}
10	A/PAK/19/2013	PAK13-19	639	632	0	98.90	1.10	ASIA	Iran-05 ^{FAR-11}
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/IRN/1/2011	IRN11-01	639	627	0	98.12	1.88	ASIA	Iran-05 ^{FAR-11}
2	A/AFG/6/2007 (FJ755007)	AFG07-06	639	603	0	94.37	5.63	ASIA	Iran-05 ^{AFG-07}
3	A/IRN/78/2009	IRN09-78	639	599	0	93.74	6.26	ASIA	Iran-05 ^{FAR-09}
4	A/AFG/10/2010	AFG10-10	639	598	0	93.58	6.42	ASIA	Iran-05 ^{HER-10}
5	A/IRN/15/2012	IRN12-15	639	598	0	93.58	6.42	ASIA	Iran-05 ^{SIS-12}
6	A/IRN/1/2005 (EF208769)	IRN05-01	639	593	0	92.80	7.20	ASIA	Iran-05
7	A/TUR/1/2008 (FJ755133)	TUR08-01	639	591	0	92.49	7.51	ASIA	Iran-05 ^{ARD-07}
8	A/BAR/6/2008 (FJ755010)	BAR08-06	639	590	0	92.33	7.67	ASIA	Iran-05 ^{BAR-08}
9	A/IRN/125/2010	IRN10125	639	586	0	91.71	8.29	ASIA	Iran-05 ^{SIS-10}
10	A/IRN/9/2010	IRN10-09	639	584	0	91.39	8.61	ASIA	Iran-05 ^{ESF-10}

nt, nucleotides

*, not a WRLFMD reference number

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Serotype: A WRLFMD Ref No: PAK/6/2013 Batch No: WRLFMD/2013/00024 Sender Ref: FMD-1061 Location: Sialkot district, Punjab province, Pakistan Date collected: 27/02/2013 Date received by WRLFMD: 07/11/2013 Date received for sequencing: 03/12/2013 Species: Cattle Material used: BTy1 15/11/2013 Region sequenced: VP1 RT-PCR primers: A-1C562F/EUR-2B52R A-1C612F/EUR-2B52R	Report date: 13/12/2013 Reported by: N.J. Knowles Checked by: K. Bachanek-Bankowska Topotype: ASIA Genotype/strain: Iran-05 ^{FAR-11} Sequence filename: PAK13-06.SEQ Date sequence last updated: 05/12/2013 No. of Nt determined: 639 No. of ambiguities: 0 Gene length: 639 Total no. of comparisons: 1806 Min. no. of nt for comparison: 600 Total turn-around time: 36 days Sequencing time: 10 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/PAK/1/2013	PAK13-01	639	635	0	99.37	0.63	ASIA	Iran-05 ^{FAR-11}
2	A/PAK/48/2012	PAK12-48	639	635	0	99.37	0.63	ASIA	Iran-05 ^{FAR-11}
3	A/PAK/11/2013	PAK13-11	639	633	0	99.06	0.94	ASIA	Iran-05 ^{FAR-11}
4	A/PAK/13/2013	PAK13-13	639	633	0	99.06	0.94	ASIA	Iran-05 ^{FAR-11}
5	A/PAK/14/2013	PAK13-14	639	633	0	99.06	0.94	ASIA	Iran-05 ^{FAR-11}
6	A/PAK/17/2013	PAK13-17	639	632	0	98.90	1.10	ASIA	Iran-05 ^{FAR-11}
7	A/PAK/19/2013	PAK13-19	639	632	0	98.90	1.10	ASIA	Iran-05 ^{FAR-11}
8	A/PAK/21/2013	PAK13-21	639	632	0	98.90	1.10	ASIA	Iran-05 ^{FAR-11}
9	A/PAK/25/2013	PAK13-25	639	632	0	98.90	1.10	ASIA	Iran-05 ^{FAR-11}
10	A/PAK/8/2013	PAK13-08	639	632	0	98.90	1.10	ASIA	Iran-05 ^{FAR-11}
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/IRN/1/2011	IRN11-01	639	625	0	97.81	2.19	ASIA	Iran-05 ^{FAR-11}
2	A/AFG/6/2007 (FJ755007)	AFG07-06	639	601	0	94.05	5.95	ASIA	Iran-05 ^{AFG-07}
3	A/IRN/78/2009	IRN09-78	639	597	0	93.43	6.57	ASIA	Iran-05 ^{FAR-09}
4	A/AFG/10/2010	AFG10-10	639	596	0	93.27	6.73	ASIA	Iran-05 ^{HER-10}
5	A/IRN/15/2012	IRN12-15	639	596	0	93.27	6.73	ASIA	Iran-05 ^{SIS-12}
6	A/IRN/1/2005 (EF208769)	IRN05-01	639	591	0	92.49	7.51	ASIA	Iran-05
7	A/TUR/1/2008 (FJ755133)	TUR08-01	639	591	0	92.49	7.51	ASIA	Iran-05 ^{ARD-07}
8	A/IRN/125/2010	IRN10125	639	588	0	92.02	7.98	ASIA	Iran-05 ^{SIS-10}
9	A/BAR/6/2008 (FJ755010)	BAR08-06	639	587	0	91.86	8.14	ASIA	Iran-05 ^{BAR-08}
10	A/TUR/33/2008 (FJ755155)	TUR08-33	639	584	0	91.39	8.61	ASIA	Iran-05 ^{EZM-07}

nt, nucleotides

*, not a WRLFMD reference number

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Serotype: A WRLFMD Ref No: PAK/8/2013 Batch No: WRLFMD/2013/00024 Sender Ref: FMD-1006 Location: Rahim Yar Khan district, Punjab province, Pakistan Date collected: 06/03/2013 Date received by WRLFMD: 07/11/2013 Date received for sequencing: 03/12/2013 Species: Cattle Material used: BTy2 28/11/2013 Region sequenced: VP1 RT-PCR primers: A-1C562F/EUR-2B52R A-1C612F/EUR-2B52R	Report date: 13/12/2013 Reported by: N.J. Knowles Checked by: K. Bachanek-Bankowska Topotype: ASIA Genotype/strain: Iran-05 ^{FAR-11} Sequence filename: PAK13-08.SEQ Date sequence last updated: 05/12/2013 No. of Nt determined: 639 No. of ambiguities: 0 Gene length: 639 Total no. of comparisons: 1806 Min. no. of nt for comparison: 600 Total turn-around time: 36 days Sequencing time: 10 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/PAK/25/2013	PAK13-25	639	637	0	99.69	0.31	ASIA	Iran-05 ^{FAR-11}
2	A/PAK/1/2013	PAK13-01	639	636	0	99.53	0.47	ASIA	Iran-05 ^{FAR-11}
3	A/PAK/11/2013	PAK13-11	639	636	0	99.53	0.47	ASIA	Iran-05 ^{FAR-11}
4	A/PAK/13/2013	PAK13-13	639	636	0	99.53	0.47	ASIA	Iran-05 ^{FAR-11}
5	A/PAK/14/2013	PAK13-14	639	636	0	99.53	0.47	ASIA	Iran-05 ^{FAR-11}
6	A/PAK/48/2012	PAK12-48	639	636	0	99.53	0.47	ASIA	Iran-05 ^{FAR-11}
7	A/PAK/17/2013	PAK13-17	639	635	0	99.37	0.63	ASIA	Iran-05 ^{FAR-11}
8	A/PAK/21/2013	PAK13-21	639	635	0	99.37	0.63	ASIA	Iran-05 ^{FAR-11}
9	A/PAK/5/2013	PAK13-05	639	634	0	99.22	0.78	ASIA	Iran-05 ^{FAR-11}
10	A/PAK/19/2013	PAK13-19	639	633	0	99.06	0.94	ASIA	Iran-05 ^{FAR-11}
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/IRN/1/2011	IRN11-01	639	626	0	97.97	2.03	ASIA	Iran-05 ^{FAR-11}
2	A/AFG/6/2007 (FJ755007)	AFG07-06	639	602	0	94.21	5.79	ASIA	Iran-05 ^{AFG-07}
3	A/IRN/78/2009	IRN09-78	639	598	0	93.58	6.42	ASIA	Iran-05 ^{FAR-09}
4	A/AFG/10/2010	AFG10-10	639	597	0	93.43	6.57	ASIA	Iran-05 ^{HER-10}
5	A/IRN/15/2012	IRN12-15	639	597	0	93.43	6.57	ASIA	Iran-05 ^{SIS-12}
6	A/IRN/1/2005 (EF208769)	IRN05-01	639	594	0	92.96	7.04	ASIA	Iran-05
7	A/TUR/1/2008 (FJ755133)	TUR08-01	639	592	0	92.64	7.36	ASIA	Iran-05 ^{ARD-07}
8	A/BAR/6/2008 (FJ755010)	BAR08-06	639	591	0	92.49	7.51	ASIA	Iran-05 ^{BAR-08}
9	A/IRN/125/2010	IRN10125	639	589	0	92.18	7.82	ASIA	Iran-05 ^{SIS-10}
10	A/IRN/9/2010	IRN10-09	639	584	0	91.39	8.61	ASIA	Iran-05 ^{ESF-10}

nt, nucleotides

*, not a WRLFMD reference number

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Serotype: A WRLFMD Ref No: PAK/11/2013 Batch No: WRLFMD/2013/00024 Sender Ref: FMD-1017 Location: Sialkot district, Punjab province, Pakistan Date collected: 19/03/2013 Date received by WRLFMD: 07/11/2013 Date received for sequencing: 03/12/2013 Species: Cattle Material used: BTy1 19/11/2013 Region sequenced: VP1 RT-PCR primers: A-1C562F/EUR-2B52R A-1C612F/EUR-2B52R	Report date: 13/12/2013 Reported by: N.J. Knowles Checked by: K. Bachanek-Bankowska Topotype: ASIA Genotype/strain: Iran-05 ^{FAR-11} Sequence filename: PAK13-11.SEQ Date sequence last updated: 05/12/2013 No. of Nt determined: 639 No. of ambiguities: 0 Gene length: 639 Total no. of comparisons: 1806 Min. no. of nt for comparison: 600 Total turn-around time: 36 days Sequencing time: 10 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/PAK/13/2013	PAK13-13	639	639	0	100.00	0.00	ASIA	Iran-05 ^{FAR-11}
2	A/PAK/1/2013	PAK13-01	639	637	0	99.69	0.31	ASIA	Iran-05 ^{FAR-11}
3	A/PAK/14/2013	PAK13-14	639	637	0	99.69	0.31	ASIA	Iran-05 ^{FAR-11}
4	A/PAK/48/2012	PAK12-48	639	637	0	99.69	0.31	ASIA	Iran-05 ^{FAR-11}
5	A/PAK/17/2013	PAK13-17	639	636	0	99.53	0.47	ASIA	Iran-05 ^{FAR-11}
6	A/PAK/19/2013	PAK13-19	639	636	0	99.53	0.47	ASIA	Iran-05 ^{FAR-11}
7	A/PAK/21/2013	PAK13-21	639	636	0	99.53	0.47	ASIA	Iran-05 ^{FAR-11}
8	A/PAK/25/2013	PAK13-25	639	636	0	99.53	0.47	ASIA	Iran-05 ^{FAR-11}
9	A/PAK/8/2013	PAK13-08	639	636	0	99.53	0.47	ASIA	Iran-05 ^{FAR-11}
10	A/PAK/5/2013	PAK13-05	639	635	0	99.37	0.63	ASIA	Iran-05 ^{FAR-11}
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/IRN/1/2011	IRN11-01	639	627	0	98.12	1.88	ASIA	Iran-05 ^{FAR-11}
2	A/AFG/6/2007 (FJ755007)	AFG07-06	639	603	0	94.37	5.63	ASIA	Iran-05 ^{AFG-07}
3	A/IRN/78/2009	IRN09-78	639	599	0	93.74	6.26	ASIA	Iran-05 ^{FAR-09}
4	A/AFG/10/2010	AFG10-10	639	598	0	93.58	6.42	ASIA	Iran-05 ^{HER-10}
5	A/IRN/15/2012	IRN12-15	639	598	0	93.58	6.42	ASIA	Iran-05 ^{SIS-12}
6	A/IRN/1/2005 (EF208769)	IRN05-01	639	593	0	92.80	7.20	ASIA	Iran-05
7	A/TUR/1/2008 (FJ755133)	TUR08-01	639	593	0	92.80	7.20	ASIA	Iran-05 ^{ARD-07}
8	A/BAR/6/2008 (FJ755010)	BAR08-06	639	590	0	92.33	7.67	ASIA	Iran-05 ^{BAR-08}
9	A/IRN/125/2010	IRN10125	639	588	0	92.02	7.98	ASIA	Iran-05 ^{SIS-10}
10	A/IRN/9/2010	IRN10-09	639	585	0	91.55	8.45	ASIA	Iran-05 ^{ESF-10}

nt, nucleotides

*, not a WRLFMD reference number

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Serotype: A WRLFMD Ref No: PAK/13/2013 Batch No: WRLFMD/2013/00024 Sender Ref: FMD-1049 Location: Mirpur District, Azad Jammu and Kashmir, Pakistan Date collected: 01/04/2013 Date received by WRLFMD: 07/11/2013 Date received for sequencing: 03/12/2013 Species: Water Buffalo Material used: BTy2 23/11/2013 Region sequenced: VP1 RT-PCR primers: A-1C562F/EUR-2B52R A-1C612F/EUR-2B52R	Report date: 13/12/2013 Reported by: N.J. Knowles Checked by: K. Bachanek-Bankowska Topotype: ASIA Genotype/strain: Iran-05 ^{FAR-11} Sequence filename: PAK13-13.SEQ Date sequence last updated: 05/12/2013 No. of Nt determined: 639 No. of ambiguities: 0 Gene length: 639 Total no. of comparisons: 1806 Min. no. of nt for comparison: 600 Total turn-around time: 36 days Sequencing time: 10 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/PAK/11/2013	PAK13-11	639	639	0	100.00	0.00	ASIA	Iran-05 ^{FAR-11}
2	A/PAK/1/2013	PAK13-01	639	637	0	99.69	0.31	ASIA	Iran-05 ^{FAR-11}
3	A/PAK/14/2013	PAK13-14	639	637	0	99.69	0.31	ASIA	Iran-05 ^{FAR-11}
4	A/PAK/48/2012	PAK12-48	639	637	0	99.69	0.31	ASIA	Iran-05 ^{FAR-11}
5	A/PAK/17/2013	PAK13-17	639	636	0	99.53	0.47	ASIA	Iran-05 ^{FAR-11}
6	A/PAK/19/2013	PAK13-19	639	636	0	99.53	0.47	ASIA	Iran-05 ^{FAR-11}
7	A/PAK/21/2013	PAK13-21	639	636	0	99.53	0.47	ASIA	Iran-05 ^{FAR-11}
8	A/PAK/25/2013	PAK13-25	639	636	0	99.53	0.47	ASIA	Iran-05 ^{FAR-11}
9	A/PAK/8/2013	PAK13-08	639	636	0	99.53	0.47	ASIA	Iran-05 ^{FAR-11}
10	A/PAK/5/2013	PAK13-05	639	635	0	99.37	0.63	ASIA	Iran-05 ^{FAR-11}
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/IRN/1/2011	IRN11-01	639	627	0	98.12	1.88	ASIA	Iran-05 ^{FAR-11}
2	A/AFG/6/2007 (FJ755007)	AFG07-06	639	603	0	94.37	5.63	ASIA	Iran-05 ^{AFG-07}
3	A/IRN/78/2009	IRN09-78	639	599	0	93.74	6.26	ASIA	Iran-05 ^{FAR-09}
4	A/AFG/10/2010	AFG10-10	639	598	0	93.58	6.42	ASIA	Iran-05 ^{HER-10}
5	A/IRN/15/2012	IRN12-15	639	598	0	93.58	6.42	ASIA	Iran-05 ^{SIS-12}
6	A/IRN/1/2005 (EF208769)	IRN05-01	639	593	0	92.80	7.20	ASIA	Iran-05
7	A/TUR/1/2008 (FJ755133)	TUR08-01	639	593	0	92.80	7.20	ASIA	Iran-05 ^{ARD-07}
8	A/BAR/6/2008 (FJ755010)	BAR08-06	639	590	0	92.33	7.67	ASIA	Iran-05 ^{BAR-08}
9	A/IRN/125/2010	IRN10125	639	588	0	92.02	7.98	ASIA	Iran-05 ^{SIS-10}
10	A/IRN/9/2010	IRN10-09	639	585	0	91.55	8.45	ASIA	Iran-05 ^{ESF-10}

nt, nucleotides

*, not a WRLFMD reference number

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Serotype: A WRLFMD Ref No: PAK/14/2013 Batch No: WRLFMD/2013/00024 Sender Ref: FMD-1051 Location: Bhakkar district, Punjab province, Pakistan Date collected: 01/04/2013 Date received by WRLFMD: 07/11/2013 Date received for sequencing: 03/12/2013 Species: Cattle Material used: BTy1 20/11/2013 Region sequenced: VP1 RT-PCR primers: A-1C562F/EUR-2B52R A-1C612F/EUR-2B52R	Report date: 13/12/2013 Reported by: N.J. Knowles Checked by: K. Bachanek-Bankowska Topotype: ASIA Genotype/strain: Iran-05 ^{FAR-11} Sequence filename: PAK13-14.SEQ Date sequence last updated: 05/12/2013 No. of Nt determined: 639 No. of ambiguities: 0 Gene length: 639 Total no. of comparisons: 1806 Min. no. of nt for comparison: 600 Total turn-around time: 36 days Sequencing time: 10 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/PAK/1/2013	PAK13-01	639	637	0	99.69	0.31	ASIA	Iran-05 ^{FAR-11}
2	A/PAK/11/2013	PAK13-11	639	637	0	99.69	0.31	ASIA	Iran-05 ^{FAR-11}
3	A/PAK/13/2013	PAK13-13	639	637	0	99.69	0.31	ASIA	Iran-05 ^{FAR-11}
4	A/PAK/48/2012	PAK12-48	639	637	0	99.69	0.31	ASIA	Iran-05 ^{FAR-11}
5	A/PAK/17/2013	PAK13-17	639	636	0	99.53	0.47	ASIA	Iran-05 ^{FAR-11}
6	A/PAK/21/2013	PAK13-21	639	636	0	99.53	0.47	ASIA	Iran-05 ^{FAR-11}
7	A/PAK/25/2013	PAK13-25	639	636	0	99.53	0.47	ASIA	Iran-05 ^{FAR-11}
8	A/PAK/8/2013	PAK13-08	639	636	0	99.53	0.47	ASIA	Iran-05 ^{FAR-11}
9	A/PAK/5/2013	PAK13-05	639	635	0	99.37	0.63	ASIA	Iran-05 ^{FAR-11}
10	A/PAK/19/2013	PAK13-19	639	634	0	99.22	0.78	ASIA	Iran-05 ^{FAR-11}
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/IRN/1/2011	IRN11-01	639	627	0	98.12	1.88	ASIA	Iran-05 ^{FAR-11}
2	A/AFG/6/2007 (FJ755007)	AFG07-06	639	603	0	94.37	5.63	ASIA	Iran-05 ^{AFG-07}
3	A/IRN/78/2009	IRN09-78	639	599	0	93.74	6.26	ASIA	Iran-05 ^{FAR-09}
4	A/AFG/10/2010	AFG10-10	639	598	0	93.58	6.42	ASIA	Iran-05 ^{HER-10}
5	A/IRN/15/2012	IRN12-15	639	598	0	93.58	6.42	ASIA	Iran-05 ^{SIS-12}
6	A/IRN/1/2005 (EF208769)	IRN05-01	639	593	0	92.80	7.20	ASIA	Iran-05
7	A/TUR/1/2008 (FJ755133)	TUR08-01	639	593	0	92.80	7.20	ASIA	Iran-05 ^{ARD-07}
8	A/BAR/6/2008 (FJ755010)	BAR08-06	639	590	0	92.33	7.67	ASIA	Iran-05 ^{BAR-08}
9	A/IRN/125/2010	IRN10125	639	588	0	92.02	7.98	ASIA	Iran-05 ^{SIS-10}
10	A/IRN/9/2010	IRN10-09	639	585	0	91.55	8.45	ASIA	Iran-05 ^{ESF-10}

nt, nucleotides

*, not a WRLFMD reference number

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Serotype: A WRLFMD Ref No: PAK/17/2013 Batch No: WRLFMD/2013/00024 Sender Ref: FMD-1081 Location: Khanewal district, Punjab province, Pakistan Date collected: 19/04/2013 Date received by WRLFMD: 07/11/2013 Date received for sequencing: 03/12/2013 Species: Cattle Material used: BTy1 19/11/2013 Region sequenced: VP1 RT-PCR primers: A-1C562F/EUR-2B52R A-1C612F/EUR-2B52R	Report date: 13/12/2013 Reported by: N.J. Knowles Checked by: K. Bachanek-Bankowska Topotype: ASIA Genotype/strain: Iran-05 ^{FAR-11} Sequence filename: PAK13-17.SEQ Date sequence last updated: 05/12/2013 No. of Nt determined: 639 No. of ambiguities: 0 Gene length: 639 Total no. of comparisons: 1806 Min. no. of nt for comparison: 600 Total turn-around time: 36 days Sequencing time: 10 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/PAK/1/2013	PAK13-01	639	636	0	99.53	0.47	ASIA	Iran-05 ^{FAR-11}
2	A/PAK/11/2013	PAK13-11	639	636	0	99.53	0.47	ASIA	Iran-05 ^{FAR-11}
3	A/PAK/13/2013	PAK13-13	639	636	0	99.53	0.47	ASIA	Iran-05 ^{FAR-11}
4	A/PAK/14/2013	PAK13-14	639	636	0	99.53	0.47	ASIA	Iran-05 ^{FAR-11}
5	A/PAK/48/2012	PAK12-48	639	636	0	99.53	0.47	ASIA	Iran-05 ^{FAR-11}
6	A/PAK/21/2013	PAK13-21	639	635	0	99.37	0.63	ASIA	Iran-05 ^{FAR-11}
7	A/PAK/25/2013	PAK13-25	639	635	0	99.37	0.63	ASIA	Iran-05 ^{FAR-11}
8	A/PAK/8/2013	PAK13-08	639	635	0	99.37	0.63	ASIA	Iran-05 ^{FAR-11}
9	A/PAK/5/2013	PAK13-05	639	634	0	99.22	0.78	ASIA	Iran-05 ^{FAR-11}
10	A/PAK/19/2013	PAK13-19	639	633	0	99.06	0.94	ASIA	Iran-05 ^{FAR-11}
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/IRN/1/2011	IRN11-01	639	626	0	97.97	2.03	ASIA	Iran-05 ^{FAR-11}
2	A/AFG/6/2007 (FJ755007)	AFG07-06	639	602	0	94.21	5.79	ASIA	Iran-05 ^{AFG-07}
3	A/IRN/78/2009	IRN09-78	639	598	0	93.58	6.42	ASIA	Iran-05 ^{FAR-09}
4	A/AFG/10/2010	AFG10-10	639	597	0	93.43	6.57	ASIA	Iran-05 ^{HER-10}
5	A/IRN/15/2012	IRN12-15	639	597	0	93.43	6.57	ASIA	Iran-05 ^{SIS-12}
6	A/IRN/1/2005 (EF208769)	IRN05-01	639	592	0	92.64	7.36	ASIA	Iran-05
7	A/TUR/1/2008 (FJ755133)	TUR08-01	639	592	0	92.64	7.36	ASIA	Iran-05 ^{ARD-07}
8	A/BAR/6/2008 (FJ755010)	BAR08-06	639	591	0	92.49	7.51	ASIA	Iran-05 ^{BAR-08}
9	A/IRN/125/2010	IRN10125	639	587	0	91.86	8.14	ASIA	Iran-05 ^{SIS-10}
10	A/IRN/9/2010	IRN10-09	639	584	0	91.39	8.61	ASIA	Iran-05 ^{ESF-10}

nt, nucleotides

*, not a WRLFMD reference number

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Serotype: A WRLFMD Ref No: PAK/19/2013 Batch No: WRLFMD/2013/00024 Sender Ref: FMD-1099 Location: Kotli District, Azad Jammu and Kashmir, Pakistan Date collected: 27/04/2013 Date received by WRLFMD: 07/11/2013 Date received for sequencing: 03/12/2013 Species: Water Buffalo Material used: BTy1 20/11/2013 Region sequenced: VP1 RT-PCR primers: A-1C562F/EUR-2B52R A-1C612F/EUR-2B52R	Report date: 13/12/2013 Reported by: N.J. Knowles Checked by: K. Bachanek-Bankowska Topotype: ASIA Genotype/strain: Iran-05 ^{FAR-11} Sequence filename: PAK13-19.SEQ Date sequence last updated: 05/12/2013 No. of Nt determined: 639 No. of ambiguities: 0 Gene length: 639 Total no. of comparisons: 1806 Min. no. of nt for comparison: 600 Total turn-around time: 36 days Sequencing time: 10 days
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Comments:

Most Closely Related Viruses

Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	A/PAK/1/2013	PAK13-01	639	636	0	99.53	0.47	ASIA	Iran-05 ^{FAR-11}
2	A/PAK/11/2013	PAK13-11	639	636	0	99.53	0.47	ASIA	Iran-05 ^{FAR-11}
3	A/PAK/13/2013	PAK13-13	639	636	0	99.53	0.47	ASIA	Iran-05 ^{FAR-11}
4	A/PAK/48/2012	PAK12-48	639	636	0	99.53	0.47	ASIA	Iran-05 ^{FAR-11}
5	A/PAK/14/2013	PAK13-14	639	634	0	99.22	0.78	ASIA	Iran-05 ^{FAR-11}
6	A/PAK/17/2013	PAK13-17	639	633	0	99.06	0.94	ASIA	Iran-05 ^{FAR-11}
7	A/PAK/21/2013	PAK13-21	639	633	0	99.06	0.94	ASIA	Iran-05 ^{FAR-11}
8	A/PAK/25/2013	PAK13-25	639	633	0	99.06	0.94	ASIA	Iran-05 ^{FAR-11}
9	A/PAK/8/2013	PAK13-08	639	633	0	99.06	0.94	ASIA	Iran-05 ^{FAR-11}
10	A/PAK/5/2013	PAK13-05	639	632	0	98.90	1.10	ASIA	Iran-05 ^{FAR-11}

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/IRN/1/2011	IRN11-01	639	626	0	97.97	2.03	ASIA	Iran-05 ^{FAR-11}
2	A/AFG/6/2007 (FJ755007)	AFG07-06	639	602	0	94.21	5.79	ASIA	Iran-05 ^{AFG-07}
3	A/IRN/78/2009	IRN09-78	639	598	0	93.58	6.42	ASIA	Iran-05 ^{FAR-09}
4	A/AFG/10/2010	AFG10-10	639	597	0	93.43	6.57	ASIA	Iran-05 ^{HER-10}
5	A/IRN/15/2012	IRN12-15	639	597	0	93.43	6.57	ASIA	Iran-05 ^{SIS-12}
6	A/IRN/1/2005 (EF208769)	IRN05-01	639	592	0	92.64	7.36	ASIA	Iran-05
7	A/TUR/1/2008 (FJ755133)	TUR08-01	639	592	0	92.64	7.36	ASIA	Iran-05 ^{ARD-07}
8	A/BAR/6/2008 (FJ755010)	BAR08-06	639	588	0	92.02	7.98	ASIA	Iran-05 ^{BAR-08}
9	A/IRN/125/2010	IRN10125	639	587	0	91.86	8.14	ASIA	Iran-05 ^{SIS-10}
10	A/IRN/9/2010	IRN10-09	639	584	0	91.39	8.61	ASIA	Iran-05 ^{ESF-10}

nt, nucleotides

*, not a WRLFMD reference number

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Serotype: A WRLFMD Ref No: PAK/21/2013 Batch No: WRLFMD/2013/00024 Sender Ref: FMD-1128 Location: Bhakkar district, Punjab province, Pakistan Date collected: 22/05/2013 Date received by WRLFMD: 07/11/2013 Date received for sequencing: 03/12/2013 Species: Cattle Material used: BTy1 20/11/2013 Region sequenced: VP1 RT-PCR primers: A-1C562F/EUR-2B52R A-1C612F/EUR-2B52R	Report date: 13/12/2013 Reported by: N.J. Knowles Checked by: K. Bachanek-Bankowska Topotype: ASIA Genotype/strain: Iran-05 ^{FAR-11} Sequence filename: PAK13-21.SEQ Date sequence last updated: 05/12/2013 No. of Nt determined: 639 No. of ambiguities: 0 Gene length: 639 Total no. of comparisons: 1806 Min. no. of nt for comparison: 600 Total turn-around time: 36 days Sequencing time: 10 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/PAK/1/2013	PAK13-01	639	636	0	99.53	0.47	ASIA	Iran-05 ^{FAR-11}
2	A/PAK/11/2013	PAK13-11	639	636	0	99.53	0.47	ASIA	Iran-05 ^{FAR-11}
3	A/PAK/13/2013	PAK13-13	639	636	0	99.53	0.47	ASIA	Iran-05 ^{FAR-11}
4	A/PAK/14/2013	PAK13-14	639	636	0	99.53	0.47	ASIA	Iran-05 ^{FAR-11}
5	A/PAK/48/2012	PAK12-48	639	636	0	99.53	0.47	ASIA	Iran-05 ^{FAR-11}
6	A/PAK/17/2013	PAK13-17	639	635	0	99.37	0.63	ASIA	Iran-05 ^{FAR-11}
7	A/PAK/25/2013	PAK13-25	639	635	0	99.37	0.63	ASIA	Iran-05 ^{FAR-11}
8	A/PAK/8/2013	PAK13-08	639	635	0	99.37	0.63	ASIA	Iran-05 ^{FAR-11}
9	A/PAK/5/2013	PAK13-05	639	634	0	99.22	0.78	ASIA	Iran-05 ^{FAR-11}
10	A/PAK/19/2013	PAK13-19	639	633	0	99.06	0.94	ASIA	Iran-05 ^{FAR-11}
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/IRN/1/2011	IRN11-01	639	626	0	97.97	2.03	ASIA	Iran-05 ^{FAR-11}
2	A/AFG/6/2007 (FJ755007)	AFG07-06	639	602	0	94.21	5.79	ASIA	Iran-05 ^{AFG-07}
3	A/IRN/78/2009	IRN09-78	639	598	0	93.58	6.42	ASIA	Iran-05 ^{FAR-09}
4	A/AFG/10/2010	AFG10-10	639	597	0	93.43	6.57	ASIA	Iran-05 ^{HER-10}
5	A/IRN/15/2012	IRN12-15	639	597	0	93.43	6.57	ASIA	Iran-05 ^{SIS-12}
6	A/IRN/1/2005 (EF208769)	IRN05-01	639	594	0	92.96	7.04	ASIA	Iran-05
7	A/TUR/1/2008 (FJ755133)	TUR08-01	639	594	0	92.96	7.04	ASIA	Iran-05 ^{ARD-07}
8	A/BAR/6/2008 (FJ755010)	BAR08-06	639	589	0	92.18	7.82	ASIA	Iran-05 ^{BAR-08}
9	A/IRN/125/2010	IRN10125	639	587	0	91.86	8.14	ASIA	Iran-05 ^{SIS-10}
10	A/IRN/9/2010	IRN10-09	639	586	0	91.71	8.29	ASIA	Iran-05 ^{ESF-10}

nt, nucleotides

*, not a WRLFMD reference number

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Serotype: A	Report date: 13/12/2013
WRLFMD Ref No: PAK/25/2013	Reported by: N.J. Knowles
Batch No: WRLFMD/2013/00024	Checked by: K. Bachanek-Bankowska
Sender Ref: FMD-1575	
Location: Karachi, Sindh province, Pakistan	Topotype: ASIA
Date collected: 01/08/2013	Genotype/strain: Iran-05 ^{FAR-11}
Date received by WRLFMD: 07/11/2013	Sequence filename: PAK13-25.SEQ
Date received for sequencing: 03/12/2013	Date sequence last updated: 05/12/2013
Species: Water Buffalo	No. of Nt determined: 639
Material used: BTy1 20/11/2013	No. of ambiguities: 0
Region sequenced: VP1	Gene length: 639
RT-PCR primers: A-1C562F/EUR-2B52R	Total no. of comparisons: 1806
A-1C612F/EUR-2B52R	Min. no. of nt for comparison: 600
	Total turn-around time: 36 days
	Sequencing time: 10 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/PAK/8/2013	PAK13-08	639	637	0	99.69	0.31	ASIA	Iran-05 ^{FAR-11}
2	A/PAK/1/2013	PAK13-01	639	636	0	99.53	0.47	ASIA	Iran-05 ^{FAR-11}
3	A/PAK/11/2013	PAK13-11	639	636	0	99.53	0.47	ASIA	Iran-05 ^{FAR-11}
4	A/PAK/13/2013	PAK13-13	639	636	0	99.53	0.47	ASIA	Iran-05 ^{FAR-11}
5	A/PAK/14/2013	PAK13-14	639	636	0	99.53	0.47	ASIA	Iran-05 ^{FAR-11}
6	A/PAK/48/2012	PAK12-48	639	636	0	99.53	0.47	ASIA	Iran-05 ^{FAR-11}
7	A/PAK/17/2013	PAK13-17	639	635	0	99.37	0.63	ASIA	Iran-05 ^{FAR-11}
8	A/PAK/21/2013	PAK13-21	639	635	0	99.37	0.63	ASIA	Iran-05 ^{FAR-11}
9	A/PAK/5/2013	PAK13-05	639	634	0	99.22	0.78	ASIA	Iran-05 ^{FAR-11}
10	A/PAK/19/2013	PAK13-19	639	633	0	99.06	0.94	ASIA	Iran-05 ^{FAR-11}
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1	A/IRN/1/2011	IRN11-01	639	626	0	97.97	2.03	ASIA	Iran-05 ^{FAR-11}
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3	A/IRN/78/2009	IRN09-78	639	598	0	93.58	6.42	ASIA	Iran-05 ^{FAR-09}
4	A/AFG/10/2010	AFG10-10	639	597	0	93.43	6.57	ASIA	Iran-05 ^{HER-10}
5	A/IRN/15/2012	IRN12-15	639	597	0	93.43	6.57	ASIA	Iran-05 ^{SIS-12}
6	A/IRN/1/2005 (EF208769)	IRN05-01	639	594	0	92.96	7.04	ASIA	Iran-05
7	A/TUR/1/2008 (FJ755133)	TUR08-01	639	592	0	92.64	7.36	ASIA	Iran-05 ^{ARD-07}
8	A/BAR/6/2008 (FJ755010)	BAR08-06	639	591	0	92.49	7.51	ASIA	Iran-05 ^{BAR-08}
9	A/IRN/125/2010	IRN10125	639	589	0	92.18	7.82	ASIA	Iran-05 ^{SIS-10}
10	A/IRN/9/2010	IRN10-09	639	584	0	91.39	8.61	ASIA	Iran-05 ^{ESF-10}

nt, nucleotides

*, not a WRLFMD reference number

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Report on FMDV A in Pakistan in 2012-2013

Batch: WRLFMD/2013/00024

◆ 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,
13 December 2013

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