

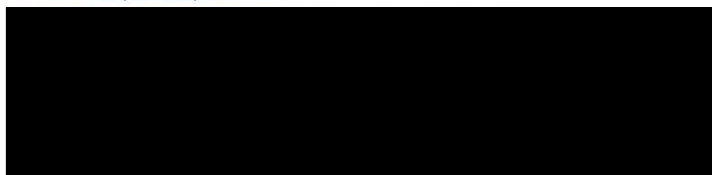


**INSTITUTE FOR ANIMAL HEALTH**  
Director: Professor John Fazakerley BSc, MBA, PhD, FRCPath  
PIRBRIGHT LABORATORY  
Ash Road,  
Pirbright,  
Surrey,  
GU24 0NF  
Intn Tel: 00 44 1483 232441  
Tel: 01483 232441 Fax: 01483 232621

## FMD Genotyping Report

Lab Reference WRL Batch Number: WRLFMD/2012/00008

Sender Details:



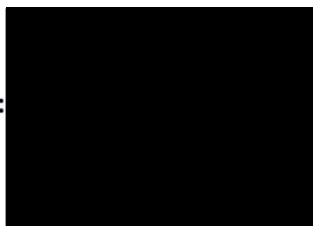
Date Received: 16TH February 2012  
Country of Origin: Pakistan  
Date Reported: 6<sup>th</sup> March 2012

Dear Dr Ehtisham Khan

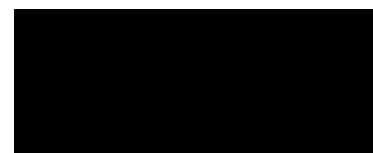
Sequencing work has now been completed in respect of the samples you submitted and the details are as attached. Please note that all of our phylogenetic trees can be accessed via the internet at:

<http://www.wrlfmd.org/>

Results Approved By:



Official Stamp:



Date:

6/3/12

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](mailto: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: 5 March 2012

FMDV type Asia 1

Country: Pakistan

Period: 2011-2012

No. of samples: 7

BATCH: WRLFMD/2012/00008



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# FAO World Reference Laboratory for FMD Genotyping Report

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Serotype: ASIA1	Report date: 02/03/2012
WRLFMD Ref No: PAK/91/2011	Reported by: N.J. Knowles
Batch No: WRLFMD/2012/00008	Checked by: D.P. King
Sender Ref: 01	
Location: Faisalabad, Punjab, Pakistan	Topotype: ASIA
Date collected: 23/12/2011	Genotype/strain: unnamed
Date received by WRLFMD: 16/02/2012	Sequence filename: PAK11-91.SEQ
Date received for sequencing: 27/02/2012	Date sequence last updated: 28/02/2012
Species: Buffalo	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: 425
As1-1C613F/EUR-2B52R	Min. no. of nt for comparison: 600
	Total turn-around time: 15 days
	Sequencing time: 4 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/PAK/92/2011	PAK11-92	633	632	0	99.84	0.16	ASIA	unnamed
2	Asia1/IRN/49/2011	IRN11-49	633	626	0	98.89	1.11	ASIA	unnamed
3	Asia1/PAK/1/2012	PAK12-01	633	626	0	98.89	1.11	ASIA	unnamed
4	Asia1/PAK/106/2010	PAK10106	633	626	0	98.89	1.11	ASIA	Unnamed
5	Asia1/PAK/108/2010	PAK10108	633	626	0	98.89	1.11	ASIA	Unnamed
6	Asia1/PAK/11/2011	PAK11-11	633	626	0	98.89	1.11	ASIA	Unnamed
7	Asia1/PAK/110/2010	PAK10110	633	626	0	98.89	1.11	ASIA	Unnamed
8	Asia1/PAK/111/2010	PAK10111	633	626	0	98.89	1.11	ASIA	Unnamed
9	Asia1/PAK/12/2011	PAK11-12	633	626	0	98.89	1.11	ASIA	Unnamed
10	Asia1/PAK/13/2011	PAK11-13	633	626	0	98.89	1.11	ASIA	Unnamed
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/AFG/1/2001 (DQ121109)	AFG01-01	633	576	0	91.00	9.00	ASIA	Group I
2	Asia1/IND/762/2003* (DQ101240)	IND03-AB	633	537	0	84.83	15.17	ASIA	Group III
3	Asia1/IND/63/72* (AY304994)	IND72C63	630	533	0	84.60	15.40	ASIA	Unnamed
4	Asia1/IND/18/80 (DQ121116)	IND80-18	633	533	0	84.20	15.80	ASIA	Group V
5	Asia1/Shamir/ISR/89	ISR89--A	633	531	0	83.89	16.11	ASIA	Unnamed
6	Asia1/IND/14/95* (AF390678)	IND95-AA	633	530	0	83.73	16.27	ASIA	Unnamed
7	Asia1/HKN/19/74	HKN74-19	633	529	0	83.57	16.43	ASIA	Unnamed
8	Asia1/YNBS/CHA/58 (AY390432)	CHA58-AA	633	529	0	83.57	16.43	ASIA	Unnamed
9	Asia1/IRN/10/2004 (DQ121119)	IRN04-10	633	525	0	82.94	17.06	ASIA	Group VIb
10	Asia1/PAK/1/54 (AY593795)	PAK54A01	630	513	0	81.43	18.57	ASIA	not defined

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: 02/03/2012
WRLFMD Ref No: PAK/92/2011	Reported by: N.J. Knowles
Batch No: WRLFMD/2012/00008	Checked by: D.P. King
Sender Ref: 02	
Location: Faisalabad, Punjab, Pakistan	Topotype: ASIA
Date collected: 23/12/2011	Genotype/strain: unnamed
Date received by WRLFMD: 16/02/2012	Sequence filename: PAK11-92.SEQ
Date received for sequencing: 27/02/2012	Date sequence last updated: 28/02/2012
Species: Buffalo	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: 425
As1-1C613F/EUR-2B52R	Min. no. of nt for comparison: 600
	Total turn-around time: 15 days
	Sequencing time: 4 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/PAK/91/2011	PAK11-91	633	632	0	99.84	0.16	ASIA	unnamed
2	Asia1/IRN/49/2011	IRN11-49	633	625	0	98.74	1.26	ASIA	unnamed
3	Asia1/PAK/1/2012	PAK12-01	633	625	0	98.74	1.26	ASIA	unnamed
4	Asia1/PAK/106/2010	PAK10106	633	625	0	98.74	1.26	ASIA	Unnamed
5	Asia1/PAK/108/2010	PAK10108	633	625	0	98.74	1.26	ASIA	Unnamed
6	Asia1/PAK/11/2011	PAK11-11	633	625	0	98.74	1.26	ASIA	Unnamed
7	Asia1/PAK/110/2010	PAK10110	633	625	0	98.74	1.26	ASIA	Unnamed
8	Asia1/PAK/111/2010	PAK10111	633	625	0	98.74	1.26	ASIA	Unnamed
9	Asia1/PAK/12/2011	PAK11-12	633	625	0	98.74	1.26	ASIA	Unnamed
10	Asia1/PAK/13/2011	PAK11-13	633	625	0	98.74	1.26	ASIA	Unnamed
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/AFG/1/2001 (DQ121109)	AFG01-01	633	575	0	90.84	9.16	ASIA	Group I
2	Asia1/IND/762/2003* (DQ101240)	IND03-AB	633	536	0	84.68	15.32	ASIA	Group III
3	Asia1/IND/63/72* (AY304994)	IND72C63	630	532	0	84.44	15.56	ASIA	Unnamed
4	Asia1/IND/18/80 (DQ121116)	IND80-18	633	532	0	84.04	15.96	ASIA	Group V
5	Asia1/Shamir/ISR/89	ISR89--A	633	530	0	83.73	16.27	ASIA	Unnamed
6	Asia1/IND/14/95* (AF390678)	IND95-AA	633	529	0	83.57	16.43	ASIA	Unnamed
7	Asia1/HKN/19/74	HKN74-19	633	528	0	83.41	16.59	ASIA	Unnamed
8	Asia1/YNBS/CHA/58 (AY390432)	CHA58-AA	633	528	0	83.41	16.59	ASIA	Unnamed
9	Asia1/IRN/10/2004 (DQ121119)	IRN04-10	633	524	0	82.78	17.22	ASIA	Group VIb
10	Asia1/PAK/1/54 (AY593795)	PAK54A01	630	512	0	81.27	18.73	ASIA	not defined

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: 02/03/2012
WRLFMD Ref No: PAK/1/2012	Reported by: N.J. Knowles
Batch No: WRLFMD/2012/00008	Checked by: D.P. King
Sender Ref: 03	
Location: Sargodha, Punjab, Pakistan	Topotype: ASIA
Date collected: 08/01/2012	Genotype/strain: unnamed
Date received by WRLFMD: 16/02/2012	Sequence filename: PAK12-01.SEQ
Date received for sequencing: 27/02/2012	Date sequence last updated: 28/02/2012
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: 425
As1-1C613F/EUR-2B52R	Min. no. of nt for comparison: 600
	Total turn-around time: 15 days
	Sequencing time: 4 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/PAK/2/2012	PAK12-02	633	633	0	100.00	0.00	ASIA	unnamed
2	Asia1/PAK/3/2012	PAK12-03	633	633	0	100.00	0.00	ASIA	unnamed
3	Asia1/IRN/49/2011	IRN11-49	633	627	0	99.05	0.95	ASIA	unnamed
4	Asia1/PAK/106/2010	PAK10106	633	627	0	99.05	0.95	ASIA	Unnamed
5	Asia1/PAK/108/2010	PAK10108	633	627	0	99.05	0.95	ASIA	Unnamed
6	Asia1/PAK/11/2011	PAK11-11	633	627	0	99.05	0.95	ASIA	Unnamed
7	Asia1/PAK/110/2010	PAK10110	633	627	0	99.05	0.95	ASIA	Unnamed
8	Asia1/PAK/111/2010	PAK10111	633	627	0	99.05	0.95	ASIA	Unnamed
9	Asia1/PAK/12/2011	PAK11-12	633	627	0	99.05	0.95	ASIA	Unnamed
10	Asia1/PAK/13/2011	PAK11-13	633	627	0	99.05	0.95	ASIA	Unnamed
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/AFG/1/2001 (DQ121109)	AFG01-01	633	574	0	90.68	9.32	ASIA	Group I
2	Asia1/IND/762/2003* (DQ101240)	IND03-AB	633	538	0	84.99	15.01	ASIA	Group III
3	Asia1/IND/63/72* (AY304994)	IND72C63	630	533	0	84.60	15.40	ASIA	Unnamed
4	Asia1/IND/18/80 (DQ121116)	IND80-18	633	534	0	84.36	15.64	ASIA	Group V
5	Asia1/YNBS/CHA/58 (AY390432)	CHA58-AA	633	531	0	83.89	16.11	ASIA	Unnamed
6	Asia1/HKN/19/74	HKN74-19	633	530	0	83.73	16.27	ASIA	Unnamed
7	Asia1/IND/14/95* (AF390678)	IND95-AA	633	529	0	83.57	16.43	ASIA	Unnamed
8	Asia1/Shamir/ISR/89	ISR89--A	633	529	0	83.57	16.43	ASIA	Unnamed
9	Asia1/IRN/10/2004 (DQ121119)	IRN04-10	633	524	0	82.78	17.22	ASIA	Group VIb
10	Asia1/PAK/1/54 (AY593795)	PAK54A01	630	514	0	81.59	18.41	ASIA	not defined

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: 02/03/2012
WRLFMD Ref No: PAK/2/2012	Reported by: N.J. Knowles
Batch No: WRLFMD/2012/00008	Checked by: D.P. King
Sender Ref: 04	
Location: Sargodha, Punjab, Pakistan	Topotype: ASIA
Date collected: 08/01/2012	Genotype/strain: unnamed
Date received by WRLFMD: 16/02/2012	Sequence filename: PAK12-02.SEQ
Date received for sequencing: 27/02/2012	Date sequence last updated: 28/02/2012
Species: Buffalo	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: 425
As1-1C613F/EUR-2B52R	Min. no. of nt for comparison: 600
	Total turn-around time: 15 days
	Sequencing time: 4 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/PAK/1/2012	PAK12-01	633	633	0	100.00	0.00	ASIA	unnamed
2	Asia1/PAK/3/2012	PAK12-03	633	633	0	100.00	0.00	ASIA	unnamed
3	Asia1/IRN/49/2011	IRN11-49	633	627	0	99.05	0.95	ASIA	unnamed
4	Asia1/PAK/106/2010	PAK10106	633	627	0	99.05	0.95	ASIA	Unnamed
5	Asia1/PAK/108/2010	PAK10108	633	627	0	99.05	0.95	ASIA	Unnamed
6	Asia1/PAK/11/2011	PAK11-11	633	627	0	99.05	0.95	ASIA	Unnamed
7	Asia1/PAK/110/2010	PAK10110	633	627	0	99.05	0.95	ASIA	Unnamed
8	Asia1/PAK/111/2010	PAK10111	633	627	0	99.05	0.95	ASIA	Unnamed
9	Asia1/PAK/12/2011	PAK11-12	633	627	0	99.05	0.95	ASIA	Unnamed
10	Asia1/PAK/13/2011	PAK11-13	633	627	0	99.05	0.95	ASIA	Unnamed
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/AFG/1/2001 (DQ121109)	AFG01-01	633	574	0	90.68	9.32	ASIA	Group I
2	Asia1/IND/762/2003* (DQ101240)	IND03-AB	633	538	0	84.99	15.01	ASIA	Group III
3	Asia1/IND/63/72* (AY304994)	IND72C63	630	533	0	84.60	15.40	ASIA	Unnamed
4	Asia1/IND/18/80 (DQ121116)	IND80-18	633	534	0	84.36	15.64	ASIA	Group V
5	Asia1/YNBS/CHA/58 (AY390432)	CHA58-AA	633	531	0	83.89	16.11	ASIA	Unnamed
6	Asia1/HKN/19/74	HKN74-19	633	530	0	83.73	16.27	ASIA	Unnamed
7	Asia1/IND/14/95* (AF390678)	IND95-AA	633	529	0	83.57	16.43	ASIA	Unnamed
8	Asia1/Shamir/ISR/89	ISR89--A	633	529	0	83.57	16.43	ASIA	Unnamed
9	Asia1/IRN/10/2004 (DQ121119)	IRN04-10	633	524	0	82.78	17.22	ASIA	Group VIb
10	Asia1/PAK/1/54 (AY593795)	PAK54A01	630	514	0	81.59	18.41	ASIA	not defined

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: 02/03/2012
WRLFMD Ref No: PAK/3/2012	Reported by: N.J. Knowles
Batch No: WRLFMD/2012/00008	Checked by: D.P. King
Sender Ref: 05	
Location: Sargodha, Punjab, Pakistan	Topotype: ASIA
Date collected: 08/01/2012	Genotype/strain: unnamed
Date received by WRLFMD: 16/02/2012	Sequence filename: PAK12-03.SEQ
Date received for sequencing: 27/02/2012	Date sequence last updated: 28/02/2012
Species: Buffalo	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: 425
As1-1C613F/EUR-2B52R	Min. no. of nt for comparison: 600
	Total turn-around time: 15 days
	Sequencing time: 4 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/PAK/1/2012	PAK12-01	633	633	0	100.00	0.00	ASIA	unnamed
2	Asia1/PAK/2/2012	PAK12-02	633	633	0	100.00	0.00	ASIA	unnamed
3	Asia1/IRN/49/2011	IRN11-49	633	627	0	99.05	0.95	ASIA	unnamed
4	Asia1/PAK/106/2010	PAK10106	633	627	0	99.05	0.95	ASIA	Unnamed
5	Asia1/PAK/108/2010	PAK10108	633	627	0	99.05	0.95	ASIA	Unnamed
6	Asia1/PAK/11/2011	PAK11-11	633	627	0	99.05	0.95	ASIA	Unnamed
7	Asia1/PAK/110/2010	PAK10110	633	627	0	99.05	0.95	ASIA	Unnamed
8	Asia1/PAK/111/2010	PAK10111	633	627	0	99.05	0.95	ASIA	Unnamed
9	Asia1/PAK/12/2011	PAK11-12	633	627	0	99.05	0.95	ASIA	Unnamed
10	Asia1/PAK/13/2011	PAK11-13	633	627	0	99.05	0.95	ASIA	Unnamed
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/AFG/1/2001 (DQ121109)	AFG01-01	633	574	0	90.68	9.32	ASIA	Group I
2	Asia1/IND/762/2003* (DQ101240)	IND03-AB	633	538	0	84.99	15.01	ASIA	Group III
3	Asia1/IND/63/72* (AY304994)	IND72C63	630	533	0	84.60	15.40	ASIA	Unnamed
4	Asia1/IND/18/80 (DQ121116)	IND80-18	633	534	0	84.36	15.64	ASIA	Group V
5	Asia1/YNBS/CHA/58 (AY390432)	CHA58-AA	633	531	0	83.89	16.11	ASIA	Unnamed
6	Asia1/HKN/19/74	HKN74-19	633	530	0	83.73	16.27	ASIA	Unnamed
7	Asia1/IND/14/95* (AF390678)	IND95-AA	633	529	0	83.57	16.43	ASIA	Unnamed
8	Asia1/Shamir/ISR/89	ISR89--A	633	529	0	83.57	16.43	ASIA	Unnamed
9	Asia1/IRN/10/2004 (DQ121119)	IRN04-10	633	524	0	82.78	17.22	ASIA	Group VIb
10	Asia1/PAK/1/54 (AY593795)	PAK54A01	630	514	0	81.59	18.41	ASIA	not defined

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

Page 1 of 1

Serotype: ASIA1	Report date: 02/03/2012
WRLFMD Ref No: PAK/4/2012	Reported by: N.J. Knowles
Batch No: WRLFMD/2012/00008	Checked by: D.P. King
Sender Ref: 06	
Location: Lakki Marvat, KPK, Pakistan	Topotype: ASIA
Date collected: 14/01/2012	Genotype/strain: unnamed
Date received by WRLFMD: 16/02/2012	Sequence filename: PAK12-04.SEQ
Date received for sequencing: 27/02/2012	Date sequence last updated: 28/02/2012
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: 425
As1-1C613F/EUR-2B52R	Min. no. of nt for comparison: 600
	Total turn-around time: 15 days
	Sequencing time: 4 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/PAK/5/2012	PAK12-05	633	633	0	100.00	0.00	ASIA	unnamed
2	Asia1/IRN/49/2011	IRN11-49	633	621	0	98.10	1.90	ASIA	unnamed
3	Asia1/PAK/106/2010	PAK10106	633	621	0	98.10	1.90	ASIA	Unnamed
4	Asia1/PAK/108/2010	PAK10108	633	621	0	98.10	1.90	ASIA	Unnamed
5	Asia1/PAK/11/2011	PAK11-11	633	621	0	98.10	1.90	ASIA	Unnamed
6	Asia1/PAK/110/2010	PAK10110	633	621	0	98.10	1.90	ASIA	Unnamed
7	Asia1/PAK/111/2010	PAK10111	633	621	0	98.10	1.90	ASIA	Unnamed
8	Asia1/PAK/12/2011	PAK11-12	633	621	0	98.10	1.90	ASIA	Unnamed
9	Asia1/PAK/13/2011	PAK11-13	633	621	0	98.10	1.90	ASIA	Unnamed
10	Asia1/PAK/14/2011	PAK11-14	633	621	0	98.10	1.90	ASIA	Unnamed
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/AFG/1/2001 (DQ121109)	AFG01-01	633	575	0	90.84	9.16	ASIA	Group I
2	Asia1/IND/762/2003* (DQ101240)	IND03-AB	633	537	0	84.83	15.17	ASIA	Group III
3	Asia1/IND/18/80 (DQ121116)	IND80-18	633	535	0	84.52	15.48	ASIA	Group V
4	Asia1/Shamir/ISR/89	ISR89--A	633	533	0	84.20	15.80	ASIA	Unnamed
5	Asia1/IND/63/72* (AY304994)	IND72C63	630	529	0	83.97	16.03	ASIA	Unnamed
6	Asia1/IND/14/95* (AF390678)	IND95-AA	633	530	0	83.73	16.27	ASIA	Unnamed
7	Asia1/YNBS/CHA/58 (AY390432)	CHA58-AA	633	528	0	83.41	16.59	ASIA	Unnamed
8	Asia1/HKN/19/74	HKN74-19	633	525	0	82.94	17.06	ASIA	Unnamed
9	Asia1/IRN/10/2004 (DQ121119)	IRN04-10	633	523	0	82.62	17.38	ASIA	Group VIb
10	Asia1/PAK/1/54 (AY593795)	PAK54A01	630	520	0	82.54	17.46	ASIA	not defined

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

Page 1 of 1

Serotype: ASIA1	Report date: 02/03/2012
WRLFMD Ref No: PAK/5/2012	Reported by: N.J. Knowles
Batch No: WRLFMD/2012/00008	Checked by: D.P. King
Sender Ref: 07	
Location: Lakki Marvat, KPK, Pakistan	Topotype: ASIA
Date collected: 14/01/2012	Genotype/strain: unnamed
Date received by WRLFMD: 16/02/2012	Sequence filename: PAK12-05.SEQ
Date received for sequencing: 27/02/2012	Date sequence last updated: 28/02/2012
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: 425
As1-1C613F/EUR-2B52R	Min. no. of nt for comparison: 600
	Total turn-around time: 15 days
	Sequencing time: 4 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/PAK/4/2012	PAK12-04	633	633	0	100.00	0.00	ASIA	unnamed
2	Asia1/IRN/49/2011	IRN11-49	633	621	0	98.10	1.90	ASIA	unnamed
3	Asia1/PAK/106/2010	PAK10106	633	621	0	98.10	1.90	ASIA	Unnamed
4	Asia1/PAK/108/2010	PAK10108	633	621	0	98.10	1.90	ASIA	Unnamed
5	Asia1/PAK/11/2011	PAK11-11	633	621	0	98.10	1.90	ASIA	Unnamed
6	Asia1/PAK/110/2010	PAK10110	633	621	0	98.10	1.90	ASIA	Unnamed
7	Asia1/PAK/111/2010	PAK10111	633	621	0	98.10	1.90	ASIA	Unnamed
8	Asia1/PAK/12/2011	PAK11-12	633	621	0	98.10	1.90	ASIA	Unnamed
9	Asia1/PAK/13/2011	PAK11-13	633	621	0	98.10	1.90	ASIA	Unnamed
10	Asia1/PAK/14/2011	PAK11-14	633	621	0	98.10	1.90	ASIA	Unnamed
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
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3	Asia1/IND/18/80 (DQ121116)	IND80-18	633	535	0	84.52	15.48	ASIA	Group V
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8	Asia1/HKN/19/74	HKN74-19	633	525	0	82.94	17.06	ASIA	Unnamed
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nt, nucleotides

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