

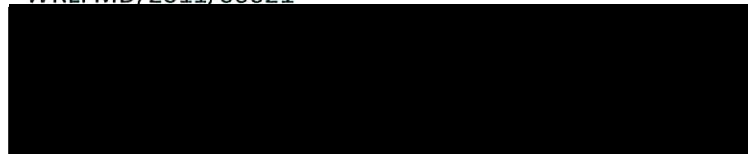


**INSTITUTE FOR ANIMAL HEALTH**  
Acting Director: Professor David Paton MA, VetMB, PhD, MRCVS  
PIRBRIGHT LABORATORY  
Ash Road,  
Pirbright,  
Surrey,  
GU24 0NF  
Intn Tel: 00 44 1483 232441  
Tel: 01483 232441 Fax: 01483 232621

## FMD Sequencing Report

Lab Reference WRL Batch Number: WRLFMD/2011/00021

Sender Details:



Date Received: 31<sup>st</sup> March 2011

Country of Origin: Pakistan

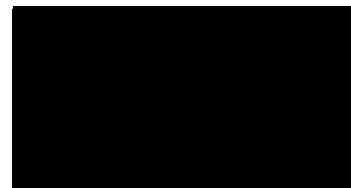
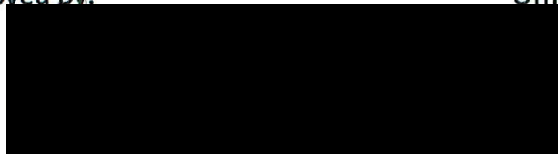
Date Reported: 13<sup>th</sup> May 2011

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/>

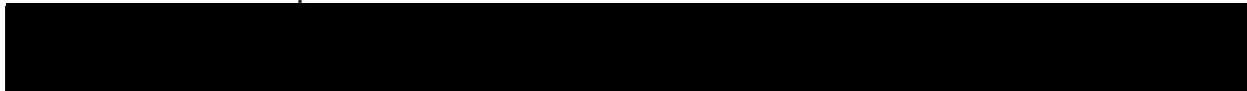
Results Approved By:

Official Stamp:



Date:

13/5/11



Testing carried out by WRLFMD is UKAS ISO/IEC 17025 accredited. Please see link for scope of accreditation:

[http://www.ukas.org/testing/lab\\_detail.asp?lab\\_id=2811&location\\_id=&vMenuOption=3](http://www.ukas.org/testing/lab_detail.asp?lab_id=2811&location_id=&vMenuOption=3) . 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: [elizabeth.wilson@bbsrc.ac.uk](mailto:elizabeth.wilson@bbsrc.ac.uk))

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

## Genotyping Report

Report Date for this Batch: 6 May 2011

FMDV type Asia 1

Country: Pakistan

Period: 2011

No. of samples: 20

BATCH: WRLFMD/2011/00021



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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: 05/05/2011
WRLFMD Ref No: PAK/51/2011	Reported by: N.J. Knowles
Batch No: WRLFMD/2011/00021	Checked by: D.P. King
Sender Ref: PKR 34	
Location: Karachi, Sindh, Pakistan	Topotype: ASIA
Date collected: 07/01/2011	Genotype/strain: unnamed
Date received by WRLFMD: 31/03/2011	Sequence filename: PAK11-51.SEQ
Date received for sequencing: 21/04/2011	Date sequence last updated: 05/05/2011
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: 393
As1-1C613F/EUR-2B52R	Min. no. of nt for comparison: 600
	Total turn-around time: 35 days
	Sequencing time: 14 days
Comments:	

Most Closely Related Viruses									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	Asia1/IRN/49/2011	IRN11-49	633	633	0	100.00	0.00	ASIA	unnamed
2	Asia1/PAK/106/2010	PAK10106	633	633	0	100.00	0.00	ASIA	Unnamed
3	Asia1/PAK/108/2010	PAK10108	633	633	0	100.00	0.00	ASIA	Unnamed
4	Asia1/PAK/11/2011	PAK11-11	633	633	0	100.00	0.00	ASIA	Unnamed
5	Asia1/PAK/110/2010	PAK10110	633	633	0	100.00	0.00	ASIA	Unnamed
6	Asia1/PAK/111/2010	PAK10111	633	633	0	100.00	0.00	ASIA	Unnamed
7	Asia1/PAK/12/2011	PAK11-12	633	633	0	100.00	0.00	ASIA	Unnamed
8	Asia1/PAK/13/2011	PAK11-13	633	633	0	100.00	0.00	ASIA	Unnamed
9	Asia1/PAK/14/2011	PAK11-14	633	633	0	100.00	0.00	ASIA	Unnamed
10	Asia1/PAK/15/2011	PAK11-15	633	633	0	100.00	0.00	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	540	0	85.31	14.69	ASIA	Group III
3	Asia1/IND/63/72* (AY304994)	IND72C63	630	535	0	84.92	15.08	ASIA	Unnamed
4	Asia1/IND/18/80 (DQ121116)	IND80-18	633	536	0	84.68	15.32	ASIA	Group V
5	Asia1/YNBS/CHA/58 (AY390432)	CHA58-AA	633	533	0	84.20	15.80	ASIA	Unnamed
6	Asia1/Shamir/ISR/89	ISR89--A	633	532	0	84.04	15.96	ASIA	Unnamed
7	Asia1/HKN/19/74	HKN74-19	633	531	0	83.89	16.11	ASIA	Unnamed
8	Asia1/IND/14/95* (AF390678)	IND95-AA	633	531	0	83.89	16.11	ASIA	Unnamed
9	Asia1/IRN/10/2004 (DQ121119)	IRN04-10	633	526	0	83.10	16.90	ASIA	Group VIb
10	Asia1/PAK/1/54 (AY593795)	PAK54A01	630	515	0	81.75	18.25	ASIA	Unnamed

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: 05/05/2011
WRLFMD Ref No: PAK/52/2011	Reported by: N.J. Knowles
Batch No: WRLFMD/2011/00021	Checked by: D.P. King
Sender Ref: PKR 35	
Location: Karachi, Sindh, Pakistan	Topotype: ASIA
Date collected: 07/01/2011	Genotype/strain: unnamed
Date received by WRLFMD: 31/03/2011	Sequence filename: PAK11-52.SEQ
Date received for sequencing: 21/04/2011	Date sequence last updated: 05/05/2011
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: 393
As1-1C613F/EUR-2B52R	Min. no. of nt for comparison: 600
	Total turn-around time: 35 days
	Sequencing time: 14 days
Comments:	

Most Closely Related Viruses									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	Asia1/IRN/49/2011	IRN11-49	633	633	0	100.00	0.00	ASIA	unnamed
2	Asia1/PAK/106/2010	PAK10106	633	633	0	100.00	0.00	ASIA	Unnamed
3	Asia1/PAK/108/2010	PAK10108	633	633	0	100.00	0.00	ASIA	Unnamed
4	Asia1/PAK/11/2011	PAK11-11	633	633	0	100.00	0.00	ASIA	Unnamed
5	Asia1/PAK/110/2010	PAK10110	633	633	0	100.00	0.00	ASIA	Unnamed
6	Asia1/PAK/111/2010	PAK10111	633	633	0	100.00	0.00	ASIA	Unnamed
7	Asia1/PAK/12/2011	PAK11-12	633	633	0	100.00	0.00	ASIA	Unnamed
8	Asia1/PAK/13/2011	PAK11-13	633	633	0	100.00	0.00	ASIA	Unnamed
9	Asia1/PAK/14/2011	PAK11-14	633	633	0	100.00	0.00	ASIA	Unnamed
10	Asia1/PAK/15/2011	PAK11-15	633	633	0	100.00	0.00	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	540	0	85.31	14.69	ASIA	Group III
3	Asia1/IND/63/72* (AY304994)	IND72C63	630	535	0	84.92	15.08	ASIA	Unnamed
4	Asia1/IND/18/80 (DQ121116)	IND80-18	633	536	0	84.68	15.32	ASIA	Group V
5	Asia1/YNBS/CHA/58 (AY390432)	CHA58-AA	633	533	0	84.20	15.80	ASIA	Unnamed
6	Asia1/Shamir/ISR/89	ISR89--A	633	532	0	84.04	15.96	ASIA	Unnamed
7	Asia1/HKN/19/74	HKN74-19	633	531	0	83.89	16.11	ASIA	Unnamed
8	Asia1/IND/14/95* (AF390678)	IND95-AA	633	531	0	83.89	16.11	ASIA	Unnamed
9	Asia1/IRN/10/2004 (DQ121119)	IRN04-10	633	526	0	83.10	16.90	ASIA	Group VIb
10	Asia1/PAK/1/54 (AY593795)	PAK54A01	630	515	0	81.75	18.25	ASIA	Unnamed

nt, nucleotides

\*, not a WRLFMD reference number

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Serotype: ASIA1 WRLFMD Ref No: PAK/53/2011 Batch No: WRLFMD/2011/00021 Sender Ref: PKR 36 Location: Karachi, Sindh, Pakistan Date collected: 07/01/2011 Date received by WRLFMD: 31/03/2011 Date received for sequencing: 21/04/2011 Species: Buffalo Material used: BTy1 Region sequenced: VP1 RT-PCR primers: As1-1C530F/EUR-2B52R As1-1C613F/EUR-2B52R	Report date: 05/05/2011 Reported by: N.J. Knowles Checked by: D.P. King  Topotype: ASIA Genotype/strain: unnamed Sequence filename: PAK11-53.SEQ Date sequence last updated: 05/05/2011 No. of Nt determined: 633 No. of ambiguities: 0 Gene length: 633 Total no. of comparisons: 393 Min. no. of nt for comparison: 600 Total turn-around time: 35 days Sequencing time: 14 days
Comments:	

Most Closely Related Viruses									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	Asia1/IRN/49/2011	IRN11-49	633	633	0	100.00	0.00	ASIA	unnamed
2	Asia1/PAK/106/2010	PAK10106	633	633	0	100.00	0.00	ASIA	Unnamed
3	Asia1/PAK/108/2010	PAK10108	633	633	0	100.00	0.00	ASIA	Unnamed
4	Asia1/PAK/11/2011	PAK11-11	633	633	0	100.00	0.00	ASIA	Unnamed
5	Asia1/PAK/110/2010	PAK10110	633	633	0	100.00	0.00	ASIA	Unnamed
6	Asia1/PAK/111/2010	PAK10111	633	633	0	100.00	0.00	ASIA	Unnamed
7	Asia1/PAK/12/2011	PAK11-12	633	633	0	100.00	0.00	ASIA	Unnamed
8	Asia1/PAK/13/2011	PAK11-13	633	633	0	100.00	0.00	ASIA	Unnamed
9	Asia1/PAK/14/2011	PAK11-14	633	633	0	100.00	0.00	ASIA	Unnamed
10	Asia1/PAK/15/2011	PAK11-15	633	633	0	100.00	0.00	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	540	0	85.31	14.69	ASIA	Group III
3	Asia1/IND/63/72* (AY304994)	IND72C63	630	535	0	84.92	15.08	ASIA	Unnamed
4	Asia1/IND/18/80 (DQ121116)	IND80-18	633	536	0	84.68	15.32	ASIA	Group V
5	Asia1/YNBS/CHA/58 (AY390432)	CHA58-AA	633	533	0	84.20	15.80	ASIA	Unnamed
6	Asia1/Shamir/ISR/89	ISR89--A	633	532	0	84.04	15.96	ASIA	Unnamed
7	Asia1/HKN/19/74	HKN74-19	633	531	0	83.89	16.11	ASIA	Unnamed
8	Asia1/IND/14/95* (AF390678)	IND95-AA	633	531	0	83.89	16.11	ASIA	Unnamed
9	Asia1/IRN/10/2004 (DQ121119)	IRN04-10	633	526	0	83.10	16.90	ASIA	Group VIb
10	Asia1/PAK/1/54 (AY593795)	PAK54A01	630	515	0	81.75	18.25	ASIA	Unnamed

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: 05/05/2011
WRLFMD Ref No: PAK/54/2011	Reported by: N.J. Knowles
Batch No: WRLFMD/2011/00021	Checked by: D.P. King
Sender Ref: PKR 37	
Location: Karachi, Sindh, Pakistan	Topotype: ASIA
Date collected: 07/01/2011	Genotype/strain: unnamed
Date received by WRLFMD: 31/03/2011	Sequence filename: PAK11-54.SEQ
Date received for sequencing: 21/04/2011	Date sequence last updated: 05/05/2011
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: 393
As1-1C613F/EUR-2B52R	Min. no. of nt for comparison: 600
	Total turn-around time: 35 days
	Sequencing time: 14 days
Comments:	

Most Closely Related Viruses									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	Asia1/IRN/49/2011	IRN11-49	633	633	0	100.00	0.00	ASIA	unnamed
2	Asia1/PAK/106/2010	PAK10106	633	633	0	100.00	0.00	ASIA	Unnamed
3	Asia1/PAK/108/2010	PAK10108	633	633	0	100.00	0.00	ASIA	Unnamed
4	Asia1/PAK/11/2011	PAK11-11	633	633	0	100.00	0.00	ASIA	Unnamed
5	Asia1/PAK/110/2010	PAK10110	633	633	0	100.00	0.00	ASIA	Unnamed
6	Asia1/PAK/111/2010	PAK10111	633	633	0	100.00	0.00	ASIA	Unnamed
7	Asia1/PAK/12/2011	PAK11-12	633	633	0	100.00	0.00	ASIA	Unnamed
8	Asia1/PAK/13/2011	PAK11-13	633	633	0	100.00	0.00	ASIA	Unnamed
9	Asia1/PAK/14/2011	PAK11-14	633	633	0	100.00	0.00	ASIA	Unnamed
10	Asia1/PAK/15/2011	PAK11-15	633	633	0	100.00	0.00	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	540	0	85.31	14.69	ASIA	Group III
3	Asia1/IND/63/72* (AY304994)	IND72C63	630	535	0	84.92	15.08	ASIA	Unnamed
4	Asia1/IND/18/80 (DQ121116)	IND80-18	633	536	0	84.68	15.32	ASIA	Group V
5	Asia1/YNBS/CHA/58 (AY390432)	CHA58-AA	633	533	0	84.20	15.80	ASIA	Unnamed
6	Asia1/Shamir/ISR/89	ISR89--A	633	532	0	84.04	15.96	ASIA	Unnamed
7	Asia1/HKN/19/74	HKN74-19	633	531	0	83.89	16.11	ASIA	Unnamed
8	Asia1/IND/14/95* (AF390678)	IND95-AA	633	531	0	83.89	16.11	ASIA	Unnamed
9	Asia1/IRN/10/2004 (DQ121119)	IRN04-10	633	526	0	83.10	16.90	ASIA	Group VIb
10	Asia1/PAK/1/54 (AY593795)	PAK54A01	630	515	0	81.75	18.25	ASIA	Unnamed

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: 05/05/2011
WRLFMD Ref No: PAK/55/2011	Reported by: N.J. Knowles
Batch No: WRLFMD/2011/00021	Checked by: D.P. King
Sender Ref: PKR 38	
Location: Karachi, Sindh, Pakistan	Topotype: ASIA
Date collected: 07/01/2011	Genotype/strain: unnamed
Date received by WRLFMD: 31/03/2011	Sequence filename: PAK11-55.SEQ
Date received for sequencing: 21/04/2011	Date sequence last updated: 05/05/2011
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: 393
As1-1C613F/EUR-2B52R	Min. no. of nt for comparison: 600
	Total turn-around time: 35 days
	Sequencing time: 14 days
Comments:	

Most Closely Related Viruses									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	Asia1/IRN/49/2011	IRN11-49	633	633	0	100.00	0.00	ASIA	unnamed
2	Asia1/PAK/106/2010	PAK10106	633	633	0	100.00	0.00	ASIA	Unnamed
3	Asia1/PAK/108/2010	PAK10108	633	633	0	100.00	0.00	ASIA	Unnamed
4	Asia1/PAK/11/2011	PAK11-11	633	633	0	100.00	0.00	ASIA	Unnamed
5	Asia1/PAK/110/2010	PAK10110	633	633	0	100.00	0.00	ASIA	Unnamed
6	Asia1/PAK/111/2010	PAK10111	633	633	0	100.00	0.00	ASIA	Unnamed
7	Asia1/PAK/12/2011	PAK11-12	633	633	0	100.00	0.00	ASIA	Unnamed
8	Asia1/PAK/13/2011	PAK11-13	633	633	0	100.00	0.00	ASIA	Unnamed
9	Asia1/PAK/14/2011	PAK11-14	633	633	0	100.00	0.00	ASIA	Unnamed
10	Asia1/PAK/15/2011	PAK11-15	633	633	0	100.00	0.00	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	540	0	85.31	14.69	ASIA	Group III
3	Asia1/IND/63/72* (AY304994)	IND72C63	630	535	0	84.92	15.08	ASIA	Unnamed
4	Asia1/IND/18/80 (DQ121116)	IND80-18	633	536	0	84.68	15.32	ASIA	Group V
5	Asia1/YNBS/CHA/58 (AY390432)	CHA58-AA	633	533	0	84.20	15.80	ASIA	Unnamed
6	Asia1/Shamir/ISR/89	ISR89--A	633	532	0	84.04	15.96	ASIA	Unnamed
7	Asia1/HKN/19/74	HKN74-19	633	531	0	83.89	16.11	ASIA	Unnamed
8	Asia1/IND/14/95* (AF390678)	IND95-AA	633	531	0	83.89	16.11	ASIA	Unnamed
9	Asia1/IRN/10/2004 (DQ121119)	IRN04-10	633	526	0	83.10	16.90	ASIA	Group VIb
10	Asia1/PAK/1/54 (AY593795)	PAK54A01	630	515	0	81.75	18.25	ASIA	Unnamed

nt, nucleotides

\*, not a WRLFMD reference number

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# FAO World Reference Laboratory for FMD Genotyping Report

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Page 1 of 1

Serotype: ASIA1	Report date: 05/05/2011
WRLFMD Ref No: PAK/56/2011	Reported by: N.J. Knowles
Batch No: WRLFMD/2011/00021	Checked by: D.P. King
Sender Ref: PKR 39	
Location: Karachi, Sindh, Pakistan	Topotype: ASIA
Date collected: 07/01/2011	Genotype/strain: unnamed
Date received by WRLFMD: 31/03/2011	Sequence filename: PAK11-56.SEQ
Date received for sequencing: 21/04/2011	Date sequence last updated: 05/05/2011
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: 393
As1-1C613F/EUR-2B52R	Min. no. of nt for comparison: 600
	Total turn-around time: 35 days
	Sequencing time: 14 days
Comments:	

Most Closely Related Viruses									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	Asia1/IRN/49/2011	IRN11-49	633	633	0	100.00	0.00	ASIA	unnamed
2	Asia1/PAK/106/2010	PAK10106	633	633	0	100.00	0.00	ASIA	Unnamed
3	Asia1/PAK/108/2010	PAK10108	633	633	0	100.00	0.00	ASIA	Unnamed
4	Asia1/PAK/11/2011	PAK11-11	633	633	0	100.00	0.00	ASIA	Unnamed
5	Asia1/PAK/110/2010	PAK10110	633	633	0	100.00	0.00	ASIA	Unnamed
6	Asia1/PAK/111/2010	PAK10111	633	633	0	100.00	0.00	ASIA	Unnamed
7	Asia1/PAK/12/2011	PAK11-12	633	633	0	100.00	0.00	ASIA	Unnamed
8	Asia1/PAK/13/2011	PAK11-13	633	633	0	100.00	0.00	ASIA	Unnamed
9	Asia1/PAK/14/2011	PAK11-14	633	633	0	100.00	0.00	ASIA	Unnamed
10	Asia1/PAK/15/2011	PAK11-15	633	633	0	100.00	0.00	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	540	0	85.31	14.69	ASIA	Group III
3	Asia1/IND/63/72* (AY304994)	IND72C63	630	535	0	84.92	15.08	ASIA	Unnamed
4	Asia1/IND/18/80 (DQ121116)	IND80-18	633	536	0	84.68	15.32	ASIA	Group V
5	Asia1/YNBS/CHA/58 (AY390432)	CHA58-AA	633	533	0	84.20	15.80	ASIA	Unnamed
6	Asia1/Shamir/ISR/89	ISR89--A	633	532	0	84.04	15.96	ASIA	Unnamed
7	Asia1/HKN/19/74	HKN74-19	633	531	0	83.89	16.11	ASIA	Unnamed
8	Asia1/IND/14/95* (AF390678)	IND95-AA	633	531	0	83.89	16.11	ASIA	Unnamed
9	Asia1/IRN/10/2004 (DQ121119)	IRN04-10	633	526	0	83.10	16.90	ASIA	Group VIb
10	Asia1/PAK/1/54 (AY593795)	PAK54A01	630	515	0	81.75	18.25	ASIA	Unnamed

nt, nucleotides

\*, not a WRLFMD reference number

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Serotype: ASIA1	Report date: 05/05/2011
WRLFMD Ref No: PAK/57/2011	Reported by: N.J. Knowles
Batch No: WRLFMD/2011/00021	Checked by: D.P. King
Sender Ref: PKR 40	
Location: Karachi, Sindh, Pakistan	Topotype: ASIA
Date collected: 15/01/2011	Genotype/strain: unnamed
Date received by WRLFMD: 31/03/2011	Sequence filename: PAK11-57.SEQ
Date received for sequencing: 21/04/2011	Date sequence last updated: 05/05/2011
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: 393
As1-1C613F/EUR-2B52R	Min. no. of nt for comparison: 600
	Total turn-around time: 35 days
	Sequencing time: 14 days
Comments:	

Most Closely Related Viruses									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	Asia1/IRN/49/2011	IRN11-49	633	633	0	100.00	0.00	ASIA	unnamed
2	Asia1/PAK/106/2010	PAK10106	633	633	0	100.00	0.00	ASIA	Unnamed
3	Asia1/PAK/108/2010	PAK10108	633	633	0	100.00	0.00	ASIA	Unnamed
4	Asia1/PAK/11/2011	PAK11-11	633	633	0	100.00	0.00	ASIA	Unnamed
5	Asia1/PAK/110/2010	PAK10110	633	633	0	100.00	0.00	ASIA	Unnamed
6	Asia1/PAK/111/2010	PAK10111	633	633	0	100.00	0.00	ASIA	Unnamed
7	Asia1/PAK/12/2011	PAK11-12	633	633	0	100.00	0.00	ASIA	Unnamed
8	Asia1/PAK/13/2011	PAK11-13	633	633	0	100.00	0.00	ASIA	Unnamed
9	Asia1/PAK/14/2011	PAK11-14	633	633	0	100.00	0.00	ASIA	Unnamed
10	Asia1/PAK/15/2011	PAK11-15	633	633	0	100.00	0.00	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	540	0	85.31	14.69	ASIA	Group III
3	Asia1/IND/63/72* (AY304994)	IND72C63	630	535	0	84.92	15.08	ASIA	Unnamed
4	Asia1/IND/18/80 (DQ121116)	IND80-18	633	536	0	84.68	15.32	ASIA	Group V
5	Asia1/YNBS/CHA/58 (AY390432)	CHA58-AA	633	533	0	84.20	15.80	ASIA	Unnamed
6	Asia1/Shamir/ISR/89	ISR89--A	633	532	0	84.04	15.96	ASIA	Unnamed
7	Asia1/HKN/19/74	HKN74-19	633	531	0	83.89	16.11	ASIA	Unnamed
8	Asia1/IND/14/95* (AF390678)	IND95-AA	633	531	0	83.89	16.11	ASIA	Unnamed
9	Asia1/IRN/10/2004 (DQ121119)	IRN04-10	633	526	0	83.10	16.90	ASIA	Group VIb
10	Asia1/PAK/1/54 (AY593795)	PAK54A01	630	515	0	81.75	18.25	ASIA	Unnamed

nt, nucleotides

\*, not a WRLFMD reference number

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Serotype: ASIA1	Report date: 05/05/2011
WRLFMD Ref No: PAK/58/2011	Reported by: N.J. Knowles
Batch No: WRLFMD/2011/00021	Checked by: D.P. King
Sender Ref: PKR 41	
Location: Karachi, Sindh, Pakistan	Topotype: ASIA
Date collected: 15/01/2011	Genotype/strain: unnamed
Date received by WRLFMD: 31/03/2011	Sequence filename: PAK11-58.SEQ
Date received for sequencing: 21/04/2011	Date sequence last updated: 05/05/2011
Species: Cattle	No. of Nt determined: 633
Material used: BTy2	No. of ambiguities: 0
Region sequenced: VP1	Gene length: 633
RT-PCR primers: As1-1C530F/EUR-2B52R	Total no. of comparisons: 393
As1-1C613F/EUR-2B52R	Min. no. of nt for comparison: 600
	Total turn-around time: 35 days
	Sequencing time: 14 days
Comments:	

Most Closely Related Viruses									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	Asia1/IRN/49/2011	IRN11-49	633	633	0	100.00	0.00	ASIA	unnamed
2	Asia1/PAK/106/2010	PAK10106	633	633	0	100.00	0.00	ASIA	Unnamed
3	Asia1/PAK/108/2010	PAK10108	633	633	0	100.00	0.00	ASIA	Unnamed
4	Asia1/PAK/11/2011	PAK11-11	633	633	0	100.00	0.00	ASIA	Unnamed
5	Asia1/PAK/110/2010	PAK10110	633	633	0	100.00	0.00	ASIA	Unnamed
6	Asia1/PAK/111/2010	PAK10111	633	633	0	100.00	0.00	ASIA	Unnamed
7	Asia1/PAK/12/2011	PAK11-12	633	633	0	100.00	0.00	ASIA	Unnamed
8	Asia1/PAK/13/2011	PAK11-13	633	633	0	100.00	0.00	ASIA	Unnamed
9	Asia1/PAK/14/2011	PAK11-14	633	633	0	100.00	0.00	ASIA	Unnamed
10	Asia1/PAK/15/2011	PAK11-15	633	633	0	100.00	0.00	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	540	0	85.31	14.69	ASIA	Group III
3	Asia1/IND/63/72* (AY304994)	IND72C63	630	535	0	84.92	15.08	ASIA	Unnamed
4	Asia1/IND/18/80 (DQ121116)	IND80-18	633	536	0	84.68	15.32	ASIA	Group V
5	Asia1/YNBS/CHA/58 (AY390432)	CHA58-AA	633	533	0	84.20	15.80	ASIA	Unnamed
6	Asia1/Shamir/ISR/89	ISR89--A	633	532	0	84.04	15.96	ASIA	Unnamed
7	Asia1/HKN/19/74	HKN74-19	633	531	0	83.89	16.11	ASIA	Unnamed
8	Asia1/IND/14/95* (AF390678)	IND95-AA	633	531	0	83.89	16.11	ASIA	Unnamed
9	Asia1/IRN/10/2004 (DQ121119)	IRN04-10	633	526	0	83.10	16.90	ASIA	Group VIb
10	Asia1/PAK/1/54 (AY593795)	PAK54A01	630	515	0	81.75	18.25	ASIA	Unnamed

nt, nucleotides

\*, not a WRLFMD reference number

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Serotype: ASIA1	Report date: 05/05/2011
WRLFMD Ref No: PAK/60/2011	Reported by: N.J. Knowles
Batch No: WRLFMD/2011/00021	Checked by: D.P. King
Sender Ref: PKR 43	
Location: Karachi, Sindh, Pakistan	Topotype: ASIA
Date collected: 15/01/2011	Genotype/strain: unnamed
Date received by WRLFMD: 31/03/2011	Sequence filename: PAK11-60.SEQ
Date received for sequencing: 21/04/2011	Date sequence last updated: 05/05/2011
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: 393
As1-1C613F/EUR-2B52R	Min. no. of nt for comparison: 600
	Total turn-around time: 35 days
	Sequencing time: 14 days
Comments:	

Most Closely Related Viruses									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	Asia1/IRN/49/2011	IRN11-49	633	633	0	100.00	0.00	ASIA	unnamed
2	Asia1/PAK/106/2010	PAK10106	633	633	0	100.00	0.00	ASIA	Unnamed
3	Asia1/PAK/108/2010	PAK10108	633	633	0	100.00	0.00	ASIA	Unnamed
4	Asia1/PAK/11/2011	PAK11-11	633	633	0	100.00	0.00	ASIA	Unnamed
5	Asia1/PAK/110/2010	PAK10110	633	633	0	100.00	0.00	ASIA	Unnamed
6	Asia1/PAK/111/2010	PAK10111	633	633	0	100.00	0.00	ASIA	Unnamed
7	Asia1/PAK/12/2011	PAK11-12	633	633	0	100.00	0.00	ASIA	Unnamed
8	Asia1/PAK/13/2011	PAK11-13	633	633	0	100.00	0.00	ASIA	Unnamed
9	Asia1/PAK/14/2011	PAK11-14	633	633	0	100.00	0.00	ASIA	Unnamed
10	Asia1/PAK/15/2011	PAK11-15	633	633	0	100.00	0.00	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	540	0	85.31	14.69	ASIA	Group III
3	Asia1/IND/63/72* (AY304994)	IND72C63	630	535	0	84.92	15.08	ASIA	Unnamed
4	Asia1/IND/18/80 (DQ121116)	IND80-18	633	536	0	84.68	15.32	ASIA	Group V
5	Asia1/YNBS/CHA/58 (AY390432)	CHA58-AA	633	533	0	84.20	15.80	ASIA	Unnamed
6	Asia1/Shamir/ISR/89	ISR89--A	633	532	0	84.04	15.96	ASIA	Unnamed
7	Asia1/HKN/19/74	HKN74-19	633	531	0	83.89	16.11	ASIA	Unnamed
8	Asia1/IND/14/95* (AF390678)	IND95-AA	633	531	0	83.89	16.11	ASIA	Unnamed
9	Asia1/IRN/10/2004 (DQ121119)	IRN04-10	633	526	0	83.10	16.90	ASIA	Group VIb
10	Asia1/PAK/1/54 (AY593795)	PAK54A01	630	515	0	81.75	18.25	ASIA	Unnamed

nt, nucleotides

\*, not a WRLFMD reference number

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Serotype: ASIA1	Report date: 05/05/2011
WRLFMD Ref No: PAK/61/2011	Reported by: N.J. Knowles
Batch No: WRLFMD/2011/00021	Checked by: D.P. King
Sender Ref: PKR 44	
Location: Karachi, Sindh, Pakistan	Topotype: ASIA
Date collected: 15/01/2011	Genotype/strain: unnamed
Date received by WRLFMD: 31/03/2011	Sequence filename: PAK11-61.SEQ
Date received for sequencing: 21/04/2011	Date sequence last updated: 05/05/2011
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: 393
As1-1C613F/EUR-2B52R	Min. no. of nt for comparison: 600
	Total turn-around time: 35 days
	Sequencing time: 14 days
Comments:	

Most Closely Related Viruses									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	Asia1/IRN/49/2011	IRN11-49	633	633	0	100.00	0.00	ASIA	unnamed
2	Asia1/PAK/106/2010	PAK10106	633	633	0	100.00	0.00	ASIA	Unnamed
3	Asia1/PAK/108/2010	PAK10108	633	633	0	100.00	0.00	ASIA	Unnamed
4	Asia1/PAK/11/2011	PAK11-11	633	633	0	100.00	0.00	ASIA	Unnamed
5	Asia1/PAK/110/2010	PAK10110	633	633	0	100.00	0.00	ASIA	Unnamed
6	Asia1/PAK/111/2010	PAK10111	633	633	0	100.00	0.00	ASIA	Unnamed
7	Asia1/PAK/12/2011	PAK11-12	633	633	0	100.00	0.00	ASIA	Unnamed
8	Asia1/PAK/13/2011	PAK11-13	633	633	0	100.00	0.00	ASIA	Unnamed
9	Asia1/PAK/14/2011	PAK11-14	633	633	0	100.00	0.00	ASIA	Unnamed
10	Asia1/PAK/15/2011	PAK11-15	633	633	0	100.00	0.00	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	540	0	85.31	14.69	ASIA	Group III
3	Asia1/IND/63/72* (AY304994)	IND72C63	630	535	0	84.92	15.08	ASIA	Unnamed
4	Asia1/IND/18/80 (DQ121116)	IND80-18	633	536	0	84.68	15.32	ASIA	Group V
5	Asia1/YNBS/CHA/58 (AY390432)	CHA58-AA	633	533	0	84.20	15.80	ASIA	Unnamed
6	Asia1/Shamir/ISR/89	ISR89--A	633	532	0	84.04	15.96	ASIA	Unnamed
7	Asia1/HKN/19/74	HKN74-19	633	531	0	83.89	16.11	ASIA	Unnamed
8	Asia1/IND/14/95* (AF390678)	IND95-AA	633	531	0	83.89	16.11	ASIA	Unnamed
9	Asia1/IRN/10/2004 (DQ121119)	IRN04-10	633	526	0	83.10	16.90	ASIA	Group VIb
10	Asia1/PAK/1/54 (AY593795)	PAK54A01	630	515	0	81.75	18.25	ASIA	Unnamed

nt, nucleotides

\*, not a WRLFMD reference number

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Serotype: ASIA1	Report date: 05/05/2011
WRLFMD Ref No: PAK/64/2011	Reported by: N.J. Knowles
Batch No: WRLFMD/2011/00021	Checked by: D.P. King
Sender Ref: PKR 45	
Location: Karachi, Sindh, Pakistan	Topotype: ASIA
Date collected: 13/02/2011	Genotype/strain: unnamed
Date received by WRLFMD: 31/03/2011	Sequence filename: PAK11-64.SEQ
Date received for sequencing: 21/04/2011	Date sequence last updated: 05/05/2011
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: 393
As1-1C613F/EUR-2B52R	Min. no. of nt for comparison: 600
	Total turn-around time: 35 days
	Sequencing time: 14 days
Comments:	

Most Closely Related Viruses									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	Asia1/IRN/49/2011	IRN11-49	633	633	0	100.00	0.00	ASIA	unnamed
2	Asia1/PAK/106/2010	PAK10106	633	633	0	100.00	0.00	ASIA	Unnamed
3	Asia1/PAK/108/2010	PAK10108	633	633	0	100.00	0.00	ASIA	Unnamed
4	Asia1/PAK/11/2011	PAK11-11	633	633	0	100.00	0.00	ASIA	Unnamed
5	Asia1/PAK/110/2010	PAK10110	633	633	0	100.00	0.00	ASIA	Unnamed
6	Asia1/PAK/111/2010	PAK10111	633	633	0	100.00	0.00	ASIA	Unnamed
7	Asia1/PAK/12/2011	PAK11-12	633	633	0	100.00	0.00	ASIA	Unnamed
8	Asia1/PAK/13/2011	PAK11-13	633	633	0	100.00	0.00	ASIA	Unnamed
9	Asia1/PAK/14/2011	PAK11-14	633	633	0	100.00	0.00	ASIA	Unnamed
10	Asia1/PAK/15/2011	PAK11-15	633	633	0	100.00	0.00	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	540	0	85.31	14.69	ASIA	Group III
3	Asia1/IND/63/72* (AY304994)	IND72C63	630	535	0	84.92	15.08	ASIA	Unnamed
4	Asia1/IND/18/80 (DQ121116)	IND80-18	633	536	0	84.68	15.32	ASIA	Group V
5	Asia1/YNBS/CHA/58 (AY390432)	CHA58-AA	633	533	0	84.20	15.80	ASIA	Unnamed
6	Asia1/Shamir/ISR/89	ISR89--A	633	532	0	84.04	15.96	ASIA	Unnamed
7	Asia1/HKN/19/74	HKN74-19	633	531	0	83.89	16.11	ASIA	Unnamed
8	Asia1/IND/14/95* (AF390678)	IND95-AA	633	531	0	83.89	16.11	ASIA	Unnamed
9	Asia1/IRN/10/2004 (DQ121119)	IRN04-10	633	526	0	83.10	16.90	ASIA	Group VIb
10	Asia1/PAK/1/54 (AY593795)	PAK54A01	630	515	0	81.75	18.25	ASIA	Unnamed

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 WRLFMD Ref No: PAK/66/2011 Batch No: WRLFMD/2011/00021 Sender Ref: PKR 47 Location: Karachi, Sindh, Pakistan Date collected: 13/02/2011 Date received by WRLFMD: 31/03/2011 Date received for sequencing: 03/05/2011 Species: Cattle Material used: BTy2 Region sequenced: VP1 RT-PCR primers: As1-1C530F/EUR-2B52R	Report date: 05/05/2011 Reported by: N.J. Knowles Checked by: D.P. King Topotype: ASIA Genotype/strain: unnamed Sequence filename: PAK11-66.SEQ Date sequence last updated: 05/05/2011 No. of Nt determined: 633 No. of ambiguities: 0 Gene length: 633 Total no. of comparisons: 393 Min. no. of nt for comparison: 600 Total turn-around time: 35 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	Asia1/PAK/47/2011	PAK11-47	633	633	0	100.00	0.00	ASIA	Unnamed
2	Asia1/PAK/6/2011	PAK11-06	633	633	0	100.00	0.00	ASIA	Unnamed
3	Asia1/IRN/33/2011	IRN11-33	633	632	0	99.84	0.16	ASIA	unnamed
4	Asia1/IRN/38/2011	IRN11-38	633	632	0	99.84	0.16	ASIA	unnamed
5	Asia1/IRN/39/2011	IRN11-39	633	631	0	99.68	0.32	ASIA	unnamed
6	Asia1/IRN/43/2011	IRN11-43	633	631	0	99.68	0.32	ASIA	unnamed
7	Asia1/IRN/46/2011	IRN11-46	633	631	0	99.68	0.32	ASIA	unnamed
8	Asia1/IRN/49/2011	IRN11-49	633	631	0	99.68	0.32	ASIA	unnamed
9	Asia1/PAK/106/2010	PAK10106	633	631	0	99.68	0.32	ASIA	Unnamed
10	Asia1/PAK/108/2010	PAK10108	633	631	0	99.68	0.32	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/Shamir/ISR/89	ISR89--A	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/IND/14/95* (AF390678)	IND95-AA	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	Unnamed

nt, nucleotides

\*, not a WRLFMD reference number

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Serotype: ASIA1	Report date: 05/05/2011
WRLFMD Ref No: PAK/67/2011	Reported by: N.J. Knowles
Batch No: WRLFMD/2011/00021	Checked by: D.P. King
Sender Ref: PKR 48	
Location: Karachi, Sindh, Pakistan	Topotype: ASIA
Date collected: 13/02/2011	Genotype/strain: unnamed
Date received by WRLFMD: 31/03/2011	Sequence filename: PAK11-67.SEQ
Date received for sequencing: 21/04/2011	Date sequence last updated: 05/05/2011
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: 393
As1-1C613F/EUR-2B52R	Min. no. of nt for comparison: 600
	Total turn-around time: 35 days
	Sequencing time: 14 days
Comments:	

Most Closely Related Viruses									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	Asia1/IRN/49/2011	IRN11-49	633	633	0	100.00	0.00	ASIA	unnamed
2	Asia1/PAK/106/2010	PAK10106	633	633	0	100.00	0.00	ASIA	Unnamed
3	Asia1/PAK/108/2010	PAK10108	633	633	0	100.00	0.00	ASIA	Unnamed
4	Asia1/PAK/11/2011	PAK11-11	633	633	0	100.00	0.00	ASIA	Unnamed
5	Asia1/PAK/110/2010	PAK10110	633	633	0	100.00	0.00	ASIA	Unnamed
6	Asia1/PAK/111/2010	PAK10111	633	633	0	100.00	0.00	ASIA	Unnamed
7	Asia1/PAK/12/2011	PAK11-12	633	633	0	100.00	0.00	ASIA	Unnamed
8	Asia1/PAK/13/2011	PAK11-13	633	633	0	100.00	0.00	ASIA	Unnamed
9	Asia1/PAK/14/2011	PAK11-14	633	633	0	100.00	0.00	ASIA	Unnamed
10	Asia1/PAK/15/2011	PAK11-15	633	633	0	100.00	0.00	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	540	0	85.31	14.69	ASIA	Group III
3	Asia1/IND/63/72* (AY304994)	IND72C63	630	535	0	84.92	15.08	ASIA	Unnamed
4	Asia1/IND/18/80 (DQ121116)	IND80-18	633	536	0	84.68	15.32	ASIA	Group V
5	Asia1/YNBS/CHA/58 (AY390432)	CHA58-AA	633	533	0	84.20	15.80	ASIA	Unnamed
6	Asia1/Shamir/ISR/89	ISR89--A	633	532	0	84.04	15.96	ASIA	Unnamed
7	Asia1/HKN/19/74	HKN74-19	633	531	0	83.89	16.11	ASIA	Unnamed
8	Asia1/IND/14/95* (AF390678)	IND95-AA	633	531	0	83.89	16.11	ASIA	Unnamed
9	Asia1/IRN/10/2004 (DQ121119)	IRN04-10	633	526	0	83.10	16.90	ASIA	Group VIb
10	Asia1/PAK/1/54 (AY593795)	PAK54A01	630	515	0	81.75	18.25	ASIA	Unnamed

nt, nucleotides

\*, not a WRLFMD reference number

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Serotype: ASIA1	Report date: 05/05/2011
WRLFMD Ref No: PAK/68/2011	Reported by: N.J. Knowles
Batch No: WRLFMD/2011/00021	Checked by: D.P. King
Sender Ref: PKR 49	
Location: Karachi, Sindh, Pakistan	Topotype: ASIA
Date collected: 13/02/2011	Genotype/strain: unnamed
Date received by WRLFMD: 31/03/2011	Sequence filename: PAK11-68.SEQ
Date received for sequencing: 21/04/2011	Date sequence last updated: 05/05/2011
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: 393
As1-1C613F/EUR-2B52R	Min. no. of nt for comparison: 600
	Total turn-around time: 35 days
	Sequencing time: 14 days
Comments:	

Most Closely Related Viruses									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	Asia1/IRN/49/2011	IRN11-49	633	633	0	100.00	0.00	ASIA	unnamed
2	Asia1/PAK/106/2010	PAK10106	633	633	0	100.00	0.00	ASIA	Unnamed
3	Asia1/PAK/108/2010	PAK10108	633	633	0	100.00	0.00	ASIA	Unnamed
4	Asia1/PAK/11/2011	PAK11-11	633	633	0	100.00	0.00	ASIA	Unnamed
5	Asia1/PAK/110/2010	PAK10110	633	633	0	100.00	0.00	ASIA	Unnamed
6	Asia1/PAK/111/2010	PAK10111	633	633	0	100.00	0.00	ASIA	Unnamed
7	Asia1/PAK/12/2011	PAK11-12	633	633	0	100.00	0.00	ASIA	Unnamed
8	Asia1/PAK/13/2011	PAK11-13	633	633	0	100.00	0.00	ASIA	Unnamed
9	Asia1/PAK/14/2011	PAK11-14	633	633	0	100.00	0.00	ASIA	Unnamed
10	Asia1/PAK/15/2011	PAK11-15	633	633	0	100.00	0.00	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	540	0	85.31	14.69	ASIA	Group III
3	Asia1/IND/63/72* (AY304994)	IND72C63	630	535	0	84.92	15.08	ASIA	Unnamed
4	Asia1/IND/18/80 (DQ121116)	IND80-18	633	536	0	84.68	15.32	ASIA	Group V
5	Asia1/YNBS/CHA/58 (AY390432)	CHA58-AA	633	533	0	84.20	15.80	ASIA	Unnamed
6	Asia1/Shamir/ISR/89	ISR89--A	633	532	0	84.04	15.96	ASIA	Unnamed
7	Asia1/HKN/19/74	HKN74-19	633	531	0	83.89	16.11	ASIA	Unnamed
8	Asia1/IND/14/95* (AF390678)	IND95-AA	633	531	0	83.89	16.11	ASIA	Unnamed
9	Asia1/IRN/10/2004 (DQ121119)	IRN04-10	633	526	0	83.10	16.90	ASIA	Group VIb
10	Asia1/PAK/1/54 (AY593795)	PAK54A01	630	515	0	81.75	18.25	ASIA	Unnamed

nt, nucleotides

\*, not a WRLFMD reference number

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Serotype: ASIA1	Report date: 05/05/2011
WRLFMD Ref No: PAK/69/2011	Reported by: N.J. Knowles
Batch No: WRLFMD/2011/00021	Checked by: D.P. King
Sender Ref: PKR 50	
Location: Karachi, Sindh, Pakistan	Topotype: ASIA
Date collected: 13/02/2011	Genotype/strain: unnamed
Date received by WRLFMD: 31/03/2011	Sequence filename: PAK11-69.SEQ
Date received for sequencing: 21/04/2011	Date sequence last updated: 05/05/2011
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: 393
As1-1C613F/EUR-2B52R	Min. no. of nt for comparison: 600
	Total turn-around time: 35 days
	Sequencing time: 14 days
Comments:	

Most Closely Related Viruses									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	Asia1/IRN/49/2011	IRN11-49	633	633	0	100.00	0.00	ASIA	unnamed
2	Asia1/PAK/106/2010	PAK10106	633	633	0	100.00	0.00	ASIA	Unnamed
3	Asia1/PAK/108/2010	PAK10108	633	633	0	100.00	0.00	ASIA	Unnamed
4	Asia1/PAK/11/2011	PAK11-11	633	633	0	100.00	0.00	ASIA	Unnamed
5	Asia1/PAK/110/2010	PAK10110	633	633	0	100.00	0.00	ASIA	Unnamed
6	Asia1/PAK/111/2010	PAK10111	633	633	0	100.00	0.00	ASIA	Unnamed
7	Asia1/PAK/12/2011	PAK11-12	633	633	0	100.00	0.00	ASIA	Unnamed
8	Asia1/PAK/13/2011	PAK11-13	633	633	0	100.00	0.00	ASIA	Unnamed
9	Asia1/PAK/14/2011	PAK11-14	633	633	0	100.00	0.00	ASIA	Unnamed
10	Asia1/PAK/15/2011	PAK11-15	633	633	0	100.00	0.00	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	540	0	85.31	14.69	ASIA	Group III
3	Asia1/IND/63/72* (AY304994)	IND72C63	630	535	0	84.92	15.08	ASIA	Unnamed
4	Asia1/IND/18/80 (DQ121116)	IND80-18	633	536	0	84.68	15.32	ASIA	Group V
5	Asia1/YNBS/CHA/58 (AY390432)	CHA58-AA	633	533	0	84.20	15.80	ASIA	Unnamed
6	Asia1/Shamir/ISR/89	ISR89--A	633	532	0	84.04	15.96	ASIA	Unnamed
7	Asia1/HKN/19/74	HKN74-19	633	531	0	83.89	16.11	ASIA	Unnamed
8	Asia1/IND/14/95* (AF390678)	IND95-AA	633	531	0	83.89	16.11	ASIA	Unnamed
9	Asia1/IRN/10/2004 (DQ121119)	IRN04-10	633	526	0	83.10	16.90	ASIA	Group VIb
10	Asia1/PAK/1/54 (AY593795)	PAK54A01	630	515	0	81.75	18.25	ASIA	Unnamed

nt, nucleotides

\*, not a WRLFMD reference number

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Serotype: ASIA1	Report date: 05/05/2011
WRLFMD Ref No: PAK/81/2011	Reported by: N.J. Knowles
Batch No: WRLFMD/2011/00021	Checked by: D.P. King
Sender Ref: PKR 51	
Location: Karachi, Sindh, Pakistan	Topotype: ASIA
Date collected: 19/02/2011	Genotype/strain: unnamed
Date received by WRLFMD: 31/03/2011	Sequence filename: PAK11-81.SEQ
Date received for sequencing: 03/05/2011	Date sequence last updated: 05/05/2011
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: 393
As1-1C613F/EUR-2B52R	Min. no. of nt for comparison: 600
	Total turn-around time: 35 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	Asia1/IRN/49/2011	IRN11-49	633	633	0	100.00	0.00	ASIA	unnamed
2	Asia1/PAK/106/2010	PAK10106	633	633	0	100.00	0.00	ASIA	Unnamed
3	Asia1/PAK/108/2010	PAK10108	633	633	0	100.00	0.00	ASIA	Unnamed
4	Asia1/PAK/11/2011	PAK11-11	633	633	0	100.00	0.00	ASIA	Unnamed
5	Asia1/PAK/110/2010	PAK10110	633	633	0	100.00	0.00	ASIA	Unnamed
6	Asia1/PAK/111/2010	PAK10111	633	633	0	100.00	0.00	ASIA	Unnamed
7	Asia1/PAK/12/2011	PAK11-12	633	633	0	100.00	0.00	ASIA	Unnamed
8	Asia1/PAK/13/2011	PAK11-13	633	633	0	100.00	0.00	ASIA	Unnamed
9	Asia1/PAK/14/2011	PAK11-14	633	633	0	100.00	0.00	ASIA	Unnamed
10	Asia1/PAK/15/2011	PAK11-15	633	633	0	100.00	0.00	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	540	0	85.31	14.69	ASIA	Group III
3	Asia1/IND/63/72* (AY304994)	IND72C63	630	535	0	84.92	15.08	ASIA	Unnamed
4	Asia1/IND/18/80 (DQ121116)	IND80-18	633	536	0	84.68	15.32	ASIA	Group V
5	Asia1/YNBS/CHA/58 (AY390432)	CHA58-AA	633	533	0	84.20	15.80	ASIA	Unnamed
6	Asia1/Shamir/ISR/89	ISR89--A	633	532	0	84.04	15.96	ASIA	Unnamed
7	Asia1/HKN/19/74	HKN74-19	633	531	0	83.89	16.11	ASIA	Unnamed
8	Asia1/IND/14/95* (AF390678)	IND95-AA	633	531	0	83.89	16.11	ASIA	Unnamed
9	Asia1/IRN/10/2004 (DQ121119)	IRN04-10	633	526	0	83.10	16.90	ASIA	Group VIb
10	Asia1/PAK/1/54 (AY593795)	PAK54A01	630	515	0	81.75	18.25	ASIA	Unnamed

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: 05/05/2011
WRLFMD Ref No: PAK/82/2011	Reported by: N.J. Knowles
Batch No: WRLFMD/2011/00021	Checked by: D.P. King
Sender Ref: PKR 52	
Location: Karachi, Sindh, Pakistan	Topotype: ASIA
Date collected: 19/02/2011	Genotype/strain: unnamed
Date received by WRLFMD: 31/03/2011	Sequence filename: PAK11-82.SEQ
Date received for sequencing: 03/05/2011	Date sequence last updated: 05/05/2011
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: 393
As1-1C613F/EUR-2B52R	Min. no. of nt for comparison: 600
	Total turn-around time: 35 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	Asia1/PAK/34/2011	PAK11-34	633	633	0	100.00	0.00	ASIA	Unnamed
2	Asia1/IRN/49/2011	IRN11-49	633	631	0	99.68	0.32	ASIA	unnamed
3	Asia1/PAK/106/2010	PAK10106	633	631	0	99.68	0.32	ASIA	Unnamed
4	Asia1/PAK/108/2010	PAK10108	633	631	0	99.68	0.32	ASIA	Unnamed
5	Asia1/PAK/11/2011	PAK11-11	633	631	0	99.68	0.32	ASIA	Unnamed
6	Asia1/PAK/110/2010	PAK10110	633	631	0	99.68	0.32	ASIA	Unnamed
7	Asia1/PAK/111/2010	PAK10111	633	631	0	99.68	0.32	ASIA	Unnamed
8	Asia1/PAK/12/2011	PAK11-12	633	631	0	99.68	0.32	ASIA	Unnamed
9	Asia1/PAK/13/2011	PAK11-13	633	631	0	99.68	0.32	ASIA	Unnamed
10	Asia1/PAK/14/2011	PAK11-14	633	631	0	99.68	0.32	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	539	0	85.15	14.85	ASIA	Group III
3	Asia1/IND/63/72* (AY304994)	IND72C63	630	534	0	84.76	15.24	ASIA	Unnamed
4	Asia1/IND/18/80 (DQ121116)	IND80-18	633	535	0	84.52	15.48	ASIA	Group V
5	Asia1/YNBS/CHA/58 (AY390432)	CHA58-AA	633	532	0	84.04	15.96	ASIA	Unnamed
6	Asia1/Shamir/ISR/89	ISR89--A	633	531	0	83.89	16.11	ASIA	Unnamed
7	Asia1/IND/14/95* (AF390678)	IND95-AA	633	530	0	83.73	16.27	ASIA	Unnamed
8	Asia1/HKN/19/74	HKN74-19	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	514	0	81.59	18.41	ASIA	Unnamed

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: 05/05/2011
WRLFMD Ref No: PAK/83/2011	Reported by: N.J. Knowles
Batch No: WRLFMD/2011/00021	Checked by: D.P. King
Sender Ref: PKR 53	
Location: Karachi, Sindh, Pakistan	Topotype: ASIA
Date collected: 19/02/2011	Genotype/strain: unnamed
Date received by WRLFMD: 31/03/2011	Sequence filename: PAK11-83.SEQ
Date received for sequencing: 03/05/2011	Date sequence last updated: 05/05/2011
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: 393
As1-1C613F/EUR-2B52R	Min. no. of nt for comparison: 600
	Total turn-around time: 35 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	Asia1/IRN/49/2011	IRN11-49	633	633	0	100.00	0.00	ASIA	unnamed
2	Asia1/PAK/106/2010	PAK10106	633	633	0	100.00	0.00	ASIA	Unnamed
3	Asia1/PAK/108/2010	PAK10108	633	633	0	100.00	0.00	ASIA	Unnamed
4	Asia1/PAK/11/2011	PAK11-11	633	633	0	100.00	0.00	ASIA	Unnamed
5	Asia1/PAK/110/2010	PAK10110	633	633	0	100.00	0.00	ASIA	Unnamed
6	Asia1/PAK/111/2010	PAK10111	633	633	0	100.00	0.00	ASIA	Unnamed
7	Asia1/PAK/12/2011	PAK11-12	633	633	0	100.00	0.00	ASIA	Unnamed
8	Asia1/PAK/13/2011	PAK11-13	633	633	0	100.00	0.00	ASIA	Unnamed
9	Asia1/PAK/14/2011	PAK11-14	633	633	0	100.00	0.00	ASIA	Unnamed
10	Asia1/PAK/15/2011	PAK11-15	633	633	0	100.00	0.00	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	540	0	85.31	14.69	ASIA	Group III
3	Asia1/IND/63/72* (AY304994)	IND72C63	630	535	0	84.92	15.08	ASIA	Unnamed
4	Asia1/IND/18/80 (DQ121116)	IND80-18	633	536	0	84.68	15.32	ASIA	Group V
5	Asia1/YNBS/CHA/58 (AY390432)	CHA58-AA	633	533	0	84.20	15.80	ASIA	Unnamed
6	Asia1/Shamir/ISR/89	ISR89--A	633	532	0	84.04	15.96	ASIA	Unnamed
7	Asia1/HKN/19/74	HKN74-19	633	531	0	83.89	16.11	ASIA	Unnamed
8	Asia1/IND/14/95* (AF390678)	IND95-AA	633	531	0	83.89	16.11	ASIA	Unnamed
9	Asia1/IRN/10/2004 (DQ121119)	IRN04-10	633	526	0	83.10	16.90	ASIA	Group VIb
10	Asia1/PAK/1/54 (AY593795)	PAK54A01	630	515	0	81.75	18.25	ASIA	Unnamed

nt, nucleotides

\*, not a WRLFMD reference number

Assembled with Report Generator v4.0

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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: 05/05/2011
WRLFMD Ref No: PAK/89/2011	Reported by: N.J. Knowles
Batch No: WRLFMD/2011/00021	Checked by: D.P. King
Sender Ref: PKR 54	
Location: Karachi, Sindh, Pakistan	Topotype: ASIA
Date collected: 25/02/2011	Genotype/strain: unnamed
Date received by WRLFMD: 31/03/2011	Sequence filename: PAK11-89.SEQ
Date received for sequencing: 03/05/2011	Date sequence last updated: 05/05/2011
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: 393
As1-1C613F/EUR-2B52R	Min. no. of nt for comparison: 600
	Total turn-around time: 35 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	Asia1/IRN/49/2011	IRN11-49	633	633	0	100.00	0.00	ASIA	unnamed
2	Asia1/PAK/106/2010	PAK10106	633	633	0	100.00	0.00	ASIA	Unnamed
3	Asia1/PAK/108/2010	PAK10108	633	633	0	100.00	0.00	ASIA	Unnamed
4	Asia1/PAK/11/2011	PAK11-11	633	633	0	100.00	0.00	ASIA	Unnamed
5	Asia1/PAK/110/2010	PAK10110	633	633	0	100.00	0.00	ASIA	Unnamed
6	Asia1/PAK/111/2010	PAK10111	633	633	0	100.00	0.00	ASIA	Unnamed
7	Asia1/PAK/12/2011	PAK11-12	633	633	0	100.00	0.00	ASIA	Unnamed
8	Asia1/PAK/13/2011	PAK11-13	633	633	0	100.00	0.00	ASIA	Unnamed
9	Asia1/PAK/14/2011	PAK11-14	633	633	0	100.00	0.00	ASIA	Unnamed
10	Asia1/PAK/15/2011	PAK11-15	633	633	0	100.00	0.00	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	540	0	85.31	14.69	ASIA	Group III
3	Asia1/IND/63/72* (AY304994)	IND72C63	630	535	0	84.92	15.08	ASIA	Unnamed
4	Asia1/IND/18/80 (DQ121116)	IND80-18	633	536	0	84.68	15.32	ASIA	Group V
5	Asia1/YNBS/CHA/58 (AY390432)	CHA58-AA	633	533	0	84.20	15.80	ASIA	Unnamed
6	Asia1/Shamir/ISR/89	ISR89--A	633	532	0	84.04	15.96	ASIA	Unnamed
7	Asia1/HKN/19/74	HKN74-19	633	531	0	83.89	16.11	ASIA	Unnamed
8	Asia1/IND/14/95* (AF390678)	IND95-AA	633	531	0	83.89	16.11	ASIA	Unnamed
9	Asia1/IRN/10/2004 (DQ121119)	IRN04-10	633	526	0	83.10	16.90	ASIA	Group VIb
10	Asia1/PAK/1/54 (AY593795)	PAK54A01	630	515	0	81.75	18.25	ASIA	Unnamed

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: 05/05/2011
WRLFMD Ref No: PAK/90/2011	Reported by: N.J. Knowles
Batch No: WRLFMD/2011/00021	Checked by: D.P. King
Sender Ref: PKR 55	
Location: Karachi, Sindh, Pakistan	Topotype: ASIA
Date collected: 25/02/2011	Genotype/strain: unnamed
Date received by WRLFMD: 31/03/2011	Sequence filename: PAK11-90.SEQ
Date received for sequencing: 03/05/2011	Date sequence last updated: 05/05/2011
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: 393
As1-1C613F/EUR-2B52R	Min. no. of nt for comparison: 600
	Total turn-around time: 35 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	Asia1/IRN/49/2011	IRN11-49	633	633	0	100.00	0.00	ASIA	unnamed
2	Asia1/PAK/106/2010	PAK10106	633	633	0	100.00	0.00	ASIA	Unnamed
3	Asia1/PAK/108/2010	PAK10108	633	633	0	100.00	0.00	ASIA	Unnamed
4	Asia1/PAK/11/2011	PAK11-11	633	633	0	100.00	0.00	ASIA	Unnamed
5	Asia1/PAK/110/2010	PAK10110	633	633	0	100.00	0.00	ASIA	Unnamed
6	Asia1/PAK/111/2010	PAK10111	633	633	0	100.00	0.00	ASIA	Unnamed
7	Asia1/PAK/12/2011	PAK11-12	633	633	0	100.00	0.00	ASIA	Unnamed
8	Asia1/PAK/13/2011	PAK11-13	633	633	0	100.00	0.00	ASIA	Unnamed
9	Asia1/PAK/14/2011	PAK11-14	633	633	0	100.00	0.00	ASIA	Unnamed
10	Asia1/PAK/15/2011	PAK11-15	633	633	0	100.00	0.00	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	540	0	85.31	14.69	ASIA	Group III
3	Asia1/IND/63/72* (AY304994)	IND72C63	630	535	0	84.92	15.08	ASIA	Unnamed
4	Asia1/IND/18/80 (DQ121116)	IND80-18	633	536	0	84.68	15.32	ASIA	Group V
5	Asia1/YNBS/CHA/58 (AY390432)	CHA58-AA	633	533	0	84.20	15.80	ASIA	Unnamed
6	Asia1/Shamir/ISR/89	ISR89--A	633	532	0	84.04	15.96	ASIA	Unnamed
7	Asia1/HKN/19/74	HKN74-19	633	531	0	83.89	16.11	ASIA	Unnamed
8	Asia1/IND/14/95* (AF390678)	IND95-AA	633	531	0	83.89	16.11	ASIA	Unnamed
9	Asia1/IRN/10/2004 (DQ121119)	IRN04-10	633	526	0	83.10	16.90	ASIA	Group VIb
10	Asia1/PAK/1/54 (AY593795)	PAK54A01	630	515	0	81.75	18.25	ASIA	Unnamed

nt, nucleotides

\*, not a WRLFMD reference number

Assembled with Report Generator v4.0

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# Report on FMDV Asia 1 in Pakistan in 2011

Batch: WRLFMD/2011/00021

◆ indicates viruses in this batch

Software: MEGA 5.0

Analysis

Analysis ----- Phylogeny Reconstruction

Scope ----- All Selected Taxa

Statistical Method ----- Neighbor-joining

Phylogeny Test

Test of Phylogeny ----- Bootstrap method

No. of Bootstrap Replications ----- 1000

Substitution Model

Substitutions Type ----- Nucleotide

Model/Method ----- Kimura 2-parameter model

Substitutions to Include ----- d: Transitions + Transversions

Rates and Patterns

Rates among Sites ----- Uniform rates

Pattern among Lineages ----- Same (Homogeneous)

Data Subset to Use

Gaps/Missing Data Treatment ----- Pairwise deletion

Codons Included ----- 1st+2nd+3rd+Non-Coding

No. of Sites : 638

No Of Bootstrap Reps = 1000

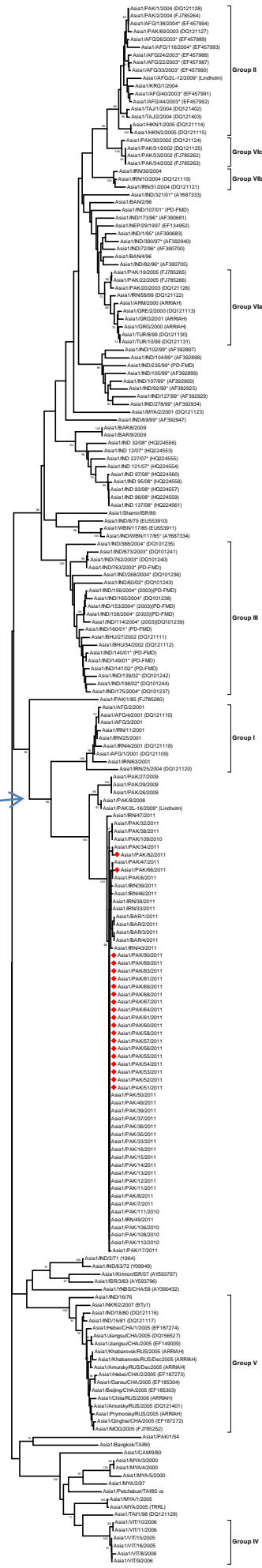
Only bootstrap values of 70% and above are shown

\*, not a WRLFMD Ref. No.

N.J. Knowles & J. Wadsworth, 05 May 2011

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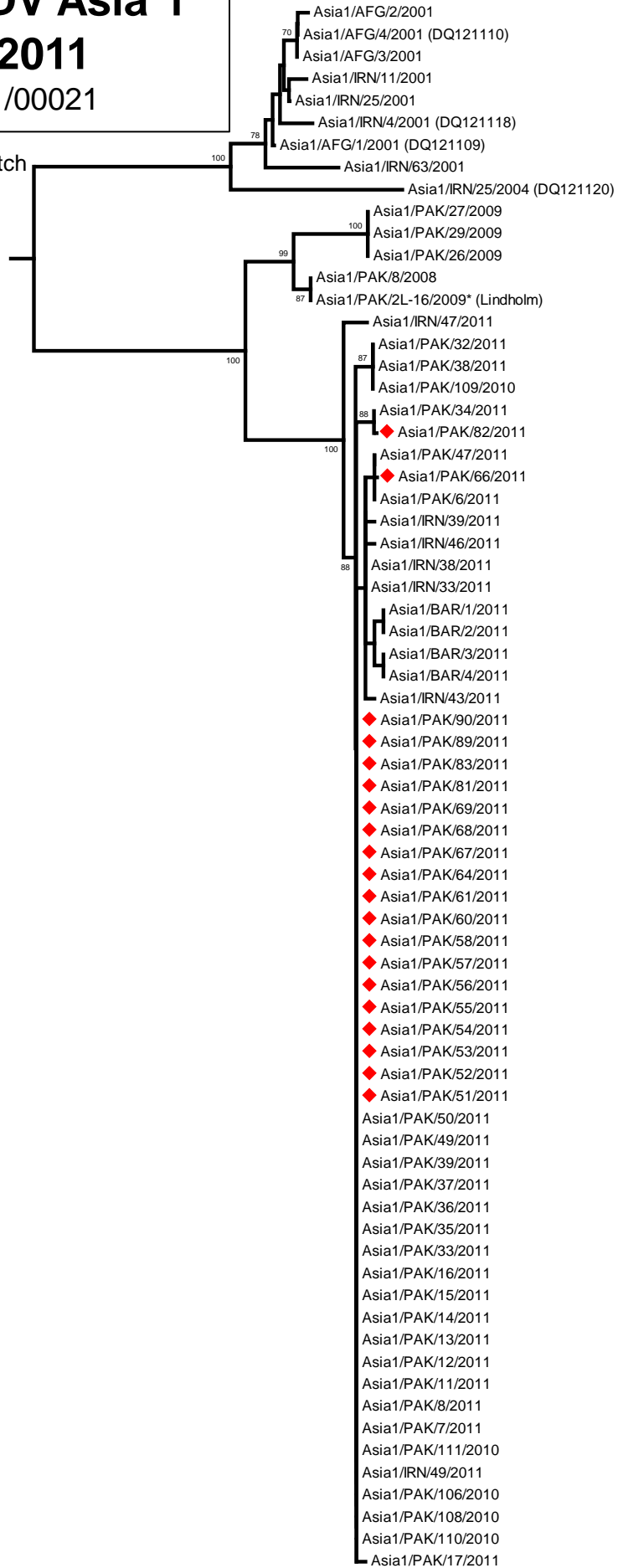
see next page



# Report on FMDV Asia 1 in Pakistan in 2011

Batch: WRLFMD/2011/00021

◆ indicates viruses in this batch



Group I

0.01