

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

## Genotyping Report

FMDV serotype: Asia1  
Country: Afghanistan  
Year: 2017  
Batch: WRLFMD/2017/00018  
No. of sequences: 2  
Report date: 19th August 2017  
Report generated by: Nick Knowles  
Report checked by: Kasia Bankowska



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

email: [reporting@pirbright.ac.uk](mailto:reporting@pirbright.ac.uk)

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Virus sample name:	AFG/17/2017
Sender reference:	9191
Location of origin:	Gozarah, Herat
Country of origin:	Afghanistan
Date of collection:	14/04/2017
Host species:	cattle
Serotype:	Asia1
Topotype:	ASIA
Lineage:	Sindh-08
Sublineage:	
Sequence length:	627
Ambiguities:	0
Material submitted for sequencing:	BTy1
Harvest date of material:	04/08/2017
Primers:	As1-1C530F/EUR-2B52R; As1-1C613F/EUR-2B52R
Received for sequencing:	15/08/2017
Created:	19/08/2017
Last updated:	19/08/2017

VIBASys IDs: sample 34254, genome 34255, sequence viba\_34256, sequencing info 34257

### Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_34260	AFG/22/2017	cattle	100.0	0	Asia1	ASIA	Sindh-08	
viba_22677	PAK/39/2014	cattle	96.3	0	Asia1	ASIA	Sindh-08	
viba_22665	PAK/26/2014	cattle	96.3	0	Asia1	ASIA	Sindh-08	
viba_30288	AFG/21/2016	bovine	96.0	0	Asia1	ASIA	Sindh-08	
viba_30284	AFG/10/2016	bovine	95.9	0	Asia1	ASIA	Sindh-08	
viba_26040	PAK/54/2015	water buffalo	95.7	0	Asia1	ASIA	Sindh-08	
viba_30280	AFG/6/2016	bovine	95.5	0	Asia1	ASIA	Sindh-08	
viba_22669	PAK/35/2014	water buffalo	95.5	0	Asia1	ASIA	Sindh-08	
viba_22673	PAK/37/2014	cattle	95.4	0	Asia1	ASIA	Sindh-08	
viba_26016	PAK/29/2015	water buffalo	95.2	0	Asia1	ASIA	Sindh-08	

### Most Closely Related Prototype Sequences

see [http://www.wrlfmd.org/fmd\\_genotyping/prototypes.htm](http://www.wrlfmd.org/fmd_genotyping/prototypes.htm)

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_206	PAK/8/2008	water buffalo	93.9	0	Asia1	ASIA	Sindh-08	
viba_167	AFG/1/2001	bovine	89.8	0	Asia1	ASIA	G- I	
viba_385	IND/762/2003	bovine	85.1	0	Asia1	ASIA	G-III	
viba_737	IND/18/80	bovine	84.3	0	Asia1	ASIA	G-V	
viba_161	IND/14/95	bovine	84.3	0	Asia1	ASIA		
viba_12154	BAR/8/2009	cattle	84.2	0	Asia1	ASIA	G-VIII	
viba_775	IRN/10/2004	cattle	84.1	0	Asia1	ASIA	G-VIb	
viba_146	Shamir/ISR/89	bovine	83.9	0	Asia1	ASIA		
viba_646	HKN/19/74	bovine	83.9	0	Asia1	ASIA		
viba_551	YNBS/CHA/58	bovine	83.7	0	Asia1	ASIA		

Virus sample name:	AFG/22/2017
Sender reference:	9192
Location of origin:	Gozarah, Herat
Country of origin:	Afghanistan
Date of collection:	23/04/2017
Host species:	cattle
Serotype:	Asia1
Topotype:	ASIA
Lineage:	Sindh-08
Sublineage:	
Sequence length:	627
Ambiguities:	0
Material submitted for sequencing:	BTy1
Harvest date of material:	05/08/2017
Primers:	As1-1C530F/EUR-2B52R; As1-1C613F/EUR-2B52R
Received for sequencing:	15/08/2017
Created:	19/08/2017
Last updated:	19/08/2017

VIBASys IDs: sample 34258, genome 34259, sequence viba\_34260, sequencing info 34261

#### Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_34256	AFG/17/2017	cattle	100.0	0	Asia1	ASIA	Sindh-08	
viba_22677	PAK/39/2014	cattle	96.3	0	Asia1	ASIA	Sindh-08	
viba_22665	PAK/26/2014	cattle	96.3	0	Asia1	ASIA	Sindh-08	
viba_30288	AFG/21/2016	bovine	96.0	0	Asia1	ASIA	Sindh-08	
viba_30284	AFG/10/2016	bovine	95.9	0	Asia1	ASIA	Sindh-08	
viba_26040	PAK/54/2015	water buffalo	95.7	0	Asia1	ASIA	Sindh-08	
viba_30280	AFG/6/2016	bovine	95.5	0	Asia1	ASIA	Sindh-08	
viba_22669	PAK/35/2014	water buffalo	95.5	0	Asia1	ASIA	Sindh-08	
viba_22673	PAK/37/2014	cattle	95.4	0	Asia1	ASIA	Sindh-08	
viba_26016	PAK/29/2015	water buffalo	95.2	0	Asia1	ASIA	Sindh-08	

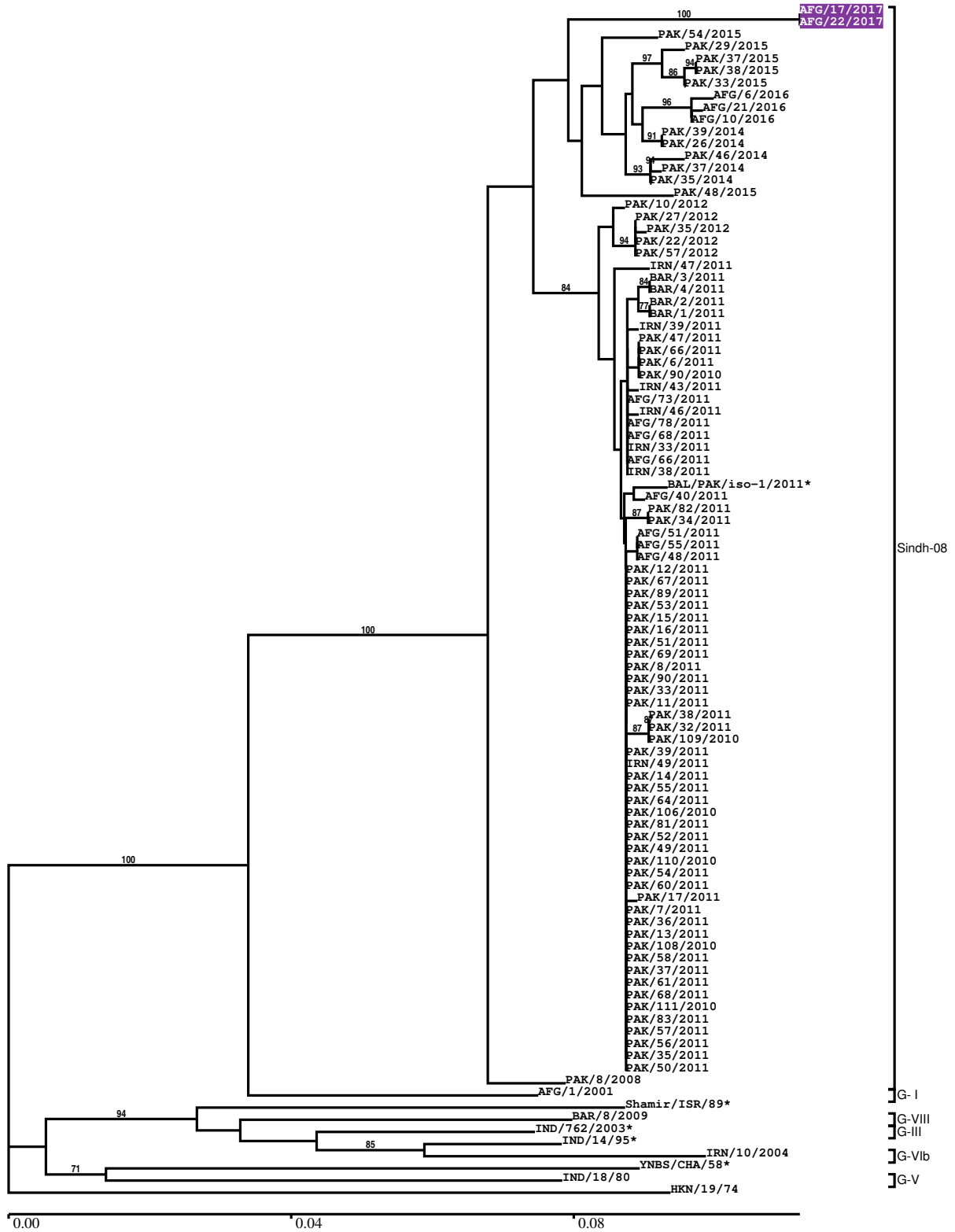
#### Most Closely Related Prototype Sequences

see [http://www.wrlfmd.org/fmd\\_genotyping/prototypes.htm](http://www.wrlfmd.org/fmd_genotyping/prototypes.htm)

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_206	PAK/8/2008	water buffalo	93.9	0	Asia1	ASIA	Sindh-08	
viba_167	AFG/1/2001	bovine	89.8	0	Asia1	ASIA	G- I	
viba_385	IND/762/2003	bovine	85.1	0	Asia1	ASIA	G-III	
viba_737	IND/18/80	bovine	84.3	0	Asia1	ASIA	G-V	
viba_161	IND/14/95	bovine	84.3	0	Asia1	ASIA		
viba_12154	BAR/8/2009	cattle	84.2	0	Asia1	ASIA	G-VIII	
viba_775	IRN/10/2004	cattle	84.1	0	Asia1	ASIA	G-VIb	
viba_146	Shamir/ISR/89	bovine	83.9	0	Asia1	ASIA		
viba_646	HKN/19/74	bovine	83.9	0	Asia1	ASIA		
viba_551	YNBS/CHA/58	bovine	83.7	0	Asia1	ASIA		

Report on FMDV Asia1 in Afghanistan in 2017

Batch: WRLFMD/2017/00018



\*, not a WRLFMD Reference Number

## Analysis Parameters

VP1 subsequence extractor:	vp1_Asia1
Query sequence set:	WRLFMD/2017/00018-Afghanistan-Asia1 (2 sequences)
Sequence database set:	allseqs_Asia1 (518 sequences)
Prototype sequence set:	!prototypes_Asia1 (12 sequences)
Number of related sequences reported:	10
Minimal VP1 subsequence match length	600
Sequence alignment method:	muscle (default parameters)
Sequence alignment length:	627
Phylogeny reconstruction method:	fdnadist, fneighbor
Number of bootstrap samples:	1000
Random seed for bootstrapping:	1
Displaying bootstrap values above:	70.0%
Number of sequences in tree capped at:	100
Number of prototype sequences in tree:	10
VIBASys version:	master-1.1.0-17-gf69a4d1

## Sequences in the Phylogenetic Tree

All sequences in the tree are in taxonomic group FMDV/Asia1/ASIA

label	accession	host(s)	lab	country	taxonomic information
AFG/17/2017	n/a	cattle	WRLFMD	Afghanistan	Sindh-08
AFG/22/2017	n/a	cattle	WRLFMD	Afghanistan	Sindh-08
PAK/54/2015	n/a	water buffalo	WRLFMD	Pakistan	Sindh-08
PAK/29/2015	n/a	water buffalo	WRLFMD	Pakistan	Sindh-08
PAK/37/2015	n/a	cattle	WRLFMD	Pakistan	Sindh-08
PAK/38/2015	n/a	cattle	WRLFMD	Pakistan	Sindh-08
PAK/33/2015	n/a	water buffalo	WRLFMD	Pakistan	Sindh-08
AFG/6/2016	n/a	bovine	WRLFMD	Afghanistan	Sindh-08
AFG/21/2016	n/a	bovine	WRLFMD	Afghanistan	Sindh-08
AFG/10/2016	n/a	bovine	WRLFMD	Afghanistan	Sindh-08
PAK/39/2014	n/a	cattle	WRLFMD	Pakistan	Sindh-08
PAK/26/2014	n/a	cattle	WRLFMD	Pakistan	Sindh-08
PAK/46/2014	n/a	water buffalo	WRLFMD	Pakistan	Sindh-08
PAK/37/2014	n/a	cattle	WRLFMD	Pakistan	Sindh-08
PAK/35/2014	n/a	water buffalo	WRLFMD	Pakistan	Sindh-08
PAK/48/2015	n/a	cattle	WRLFMD	Pakistan	Sindh-08
PAK/10/2012	n/a	cattle	WRLFMD	Pakistan	Sindh-08
PAK/27/2012	n/a	cattle	WRLFMD	Pakistan	Sindh-08
PAK/35/2012	n/a	water buffalo	WRLFMD	Pakistan	Sindh-08
PAK/22/2012	n/a	cattle	WRLFMD	Pakistan	Sindh-08
PAK/57/2012	n/a	water buffalo	WRLFMD	Pakistan	Sindh-08
IRN/47/2011	n/a	cattle	WRLFMD	Iran	Sindh-08
BAR/3/2011	n/a	n/a	WRLFMD	Bahrain	Sindh-08
BAR/4/2011	n/a	n/a	WRLFMD	Bahrain	Sindh-08
BAR/2/2011	n/a	n/a	WRLFMD	Bahrain	Sindh-08
BAR/1/2011	n/a	n/a	WRLFMD	Bahrain	Sindh-08
IRN/39/2011	n/a	cattle	WRLFMD	Iran	Sindh-08
PAK/47/2011	n/a	cattle	WRLFMD	Pakistan	Sindh-08
PAK/66/2011	n/a	cattle	WRLFMD	Pakistan	Sindh-08
PAK/6/2011	n/a	water buffalo	WRLFMD	Pakistan	Sindh-08
PAK/90/2010	n/a	cattle	WRLFMD	Pakistan	Sindh-08
IRN/43/2011	n/a	cattle	WRLFMD	Iran	Sindh-08
AFG/73/2011	n/a	cattle	WRLFMD	Afghanistan	Sindh-08
IRN/46/2011	n/a	cattle	WRLFMD	Iran	Sindh-08
AFG/78/2011	n/a	cattle	WRLFMD	Afghanistan	Sindh-08
AFG/68/2011	n/a	cattle	WRLFMD	Afghanistan	Sindh-08

*continued on next page*

label	accession	host(s)	lab	country	taxonomic information
IRN/33/2011	n/a	cattle	WRLFMD	Iran	Sindh-08
AFG/66/2011	n/a	cattle	WRLFMD	Afghanistan	Sindh-08
IRN/38/2011	n/a	cattle	WRLFMD	Iran	Sindh-08
BAL/PAK/iso-1/2011*	JX435110	cattle	ANSES	Pakistan	Sindh-08
AFG/40/2011	n/a	n/a	WRLFMD	Afghanistan	Sindh-08
PAK/82/2011	n/a	cattle	WRLFMD	Pakistan	Sindh-08
PAK/34/2011	n/a	water buffalo	WRLFMD	Pakistan	Sindh-08
AFG/51/2011	n/a	n/a	WRLFMD	Afghanistan	Sindh-08
AFG/55/2011	n/a	n/a	WRLFMD	Afghanistan	Sindh-08
AFG/48/2011	n/a	n/a	WRLFMD	Afghanistan	Sindh-08
PAK/12/2011	n/a	cattle	WRLFMD	Pakistan	Sindh-08
PAK/67/2011	n/a	cattle	WRLFMD	Pakistan	Sindh-08
PAK/89/2011	n/a	cattle	WRLFMD	Pakistan	Sindh-08
PAK/53/2011	n/a	water buffalo	WRLFMD	Pakistan	Sindh-08
PAK/15/2011	n/a	water buffalo	WRLFMD	Pakistan	Sindh-08
PAK/16/2011	n/a	water buffalo	WRLFMD	Pakistan	Sindh-08
PAK/51/2011	n/a	cattle	WRLFMD	Pakistan	Sindh-08
PAK/69/2011	n/a	water buffalo	WRLFMD	Pakistan	Sindh-08
PAK/8/2011	n/a	water buffalo	WRLFMD	Pakistan	Sindh-08
PAK/90/2011	n/a	cattle	WRLFMD	Pakistan	Sindh-08
PAK/33/2011	n/a	water buffalo	WRLFMD	Pakistan	Sindh-08
PAK/11/2011	n/a	cattle	WRLFMD	Pakistan	Sindh-08
PAK/38/2011	n/a	cattle	WRLFMD	Pakistan	Sindh-08
PAK/32/2011	n/a	water buffalo	WRLFMD	Pakistan	Sindh-08
PAK/109/2010	n/a	cattle	WRLFMD	Pakistan	Sindh-08
PAK/39/2011	n/a	cattle	WRLFMD	Pakistan	Sindh-08
IRN/49/2011	n/a	cattle	WRLFMD	Iran	Sindh-08
PAK/14/2011	n/a	water buffalo	WRLFMD	Pakistan	Sindh-08
PAK/55/2011	n/a	water buffalo	WRLFMD	Pakistan	Sindh-08
PAK/64/2011	n/a	water buffalo	WRLFMD	Pakistan	Sindh-08
PAK/106/2010	n/a	water buffalo	WRLFMD	Pakistan	Sindh-08
PAK/81/2011	n/a	cattle	WRLFMD	Pakistan	Sindh-08
PAK/52/2011	n/a	cattle	WRLFMD	Pakistan	Sindh-08
PAK/49/2011	n/a	water buffalo	WRLFMD	Pakistan	Sindh-08
PAK/110/2010	n/a	cattle	WRLFMD	Pakistan	Sindh-08
PAK/54/2011	n/a	cattle	WRLFMD	Pakistan	Sindh-08
PAK/60/2011	n/a	cattle	WRLFMD	Pakistan	Sindh-08
PAK/17/2011	n/a	cattle	WRLFMD	Pakistan	Sindh-08
PAK/7/2011	n/a	water buffalo	WRLFMD	Pakistan	Sindh-08
PAK/36/2011	n/a	cattle	WRLFMD	Pakistan	Sindh-08
PAK/13/2011	n/a	cattle	WRLFMD	Pakistan	Sindh-08
PAK/108/2010	n/a	cattle	WRLFMD	Pakistan	Sindh-08
PAK/58/2011	n/a	cattle	WRLFMD	Pakistan	Sindh-08
PAK/37/2011	n/a	cattle	WRLFMD	Pakistan	Sindh-08
PAK/61/2011	n/a	cattle	WRLFMD	Pakistan	Sindh-08
PAK/68/2011	n/a	water buffalo	WRLFMD	Pakistan	Sindh-08
PAK/111/2010	n/a	cattle	WRLFMD	Pakistan	Sindh-08
PAK/83/2011	n/a	water buffalo	WRLFMD	Pakistan	Sindh-08
PAK/57/2011	n/a	water buffalo	WRLFMD	Pakistan	Sindh-08
PAK/56/2011	n/a	cattle	WRLFMD	Pakistan	Sindh-08
PAK/35/2011	n/a	water buffalo	WRLFMD	Pakistan	Sindh-08
PAK/50/2011	n/a	water buffalo	WRLFMD	Pakistan	Sindh-08
PAK/8/2008	KY091304	water buffalo	WRLFMD	Pakistan	Sindh-08
AFG/1/2001	DQ121109	bovine	WRLFMD	Afghanistan	G- I
Shamir/ISR/89*	n/a	bovine	BFAV	Israel	
BAR/8/2009	n/a	cattle	WRLFMD	Bahrain	G-VIII
IND/762/2003*	DQ101240	bovine	PD-FMD	India	G-III
IND/14/95*	AF390678	bovine	PD-FMD	India	
IRN/10/2004	DQ121119	cattle	WRLFMD	Iran	G-VIb
YNBS/CHA/58*	AY390432	bovine	LVRI	China	
IND/18/80	DQ121116	bovine	WRLFMD	India	G-V
HKN/19/74	n/a	bovine	WRLFMD	Hong Kong SAR	

\*, not a WRLFMD Reference Number

n/a, not available