

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

## Genotyping Report

FMDV serotype: A  
Country: Iran  
Year: 2016, 2017  
Batch: WRLFMD/2017/00008  
No. of sequences: 9  
Report date: 17th May 2017  
Report generated by: Nick Knowles  
Report checked by: Kasia Bankowska



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Virus sample name:	IRN/34/2016
Sender reference:	IR-95-53
Location of origin:	Mahmood abad, Qom
Country of origin:	Iran
Date of collection:	06/12/2016
Host species:	cattle
Serotype:	A
Topotype:	ASIA
Lineage:	Iran-05
Sublineage:	FAR-09
Sequence length:	633
Ambiguities:	0
Material submitted for sequencing:	BTy1
Harvest date of material:	26/04/2017
Primers:	A-1C612F/EUR-2B52R
Received for sequencing:	08/05/2017
Created:	13/05/2017
Last updated:	13/05/2017
VIBASys IDs: sample 33577, genome 33578, sequence viba_33579, sequencing info 33580	

#### Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_33587	IRN/2/2017	cattle	99.7	0	A	ASIA	Iran-05	FAR-09
viba_33611	IRN/13/2017	sheep	99.2	0	A	ASIA	Iran-05	FAR-09
viba_33595	IRN/6/2017	sheep	99.2	0	A	ASIA	Iran-05	FAR-09
viba_33603	IRN/9/2017	cattle	99.2	0	A	ASIA	Iran-05	FAR-09
viba_33607	IRN/10/2017	cattle	98.7	0	A	ASIA	Iran-05	FAR-09
viba_25947	PAK/53/2015	cattle	97.9	0	A	ASIA	Iran-05	FAR-09
viba_22410	PAK/10/2014	cattle	96.5	0	A	ASIA	Iran-05	FAR-09
viba_20947	IRN/28/2013	cattle	96.5	0	A	ASIA	Iran-05	FAR-09
viba_22454	PAK/14/2014	cattle	96.5	0	A	ASIA	Iran-05	FAR-09
viba_20943	IRN/27/2013	cattle	96.5	0	A	ASIA	Iran-05	FAR-09

#### 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_331	AFG/10/2010		92.9	0	A	ASIA	Iran-05	HER-10
viba_636	IRN/78/2009		92.9	0	A	ASIA	Iran-05	FAR-09
viba_414	AFG/6/2007	bovine	92.4	0	A	ASIA	Iran-05	AFG-07
viba_594	IRN/1/2011	bovine	92.3	0	A	ASIA	Iran-05	FAR-11
viba_319	BAR/6/2008	bovine	91.9	0	A	ASIA	Iran-05	BAR-08
viba_403	TUR/1/2008	cattle	91.5	0	A	ASIA	Iran-05	ARD-07
viba_133	IRN/1/2005	cattle	91.5	0	A	ASIA	Iran-05	
viba_557	IRN/15/2012	bovine	91.0	0	A	ASIA	Iran-05	SIS-12
viba_791	IRN/125/2010	bovine	91.0	0	A	ASIA	Iran-05	SIS-10
viba_429	TUR/33/2008	cattle	90.4	0	A	ASIA	Iran-05	EZM-07

Virus sample name:	IRN/39/2016
Sender reference:	IR-95-54
Location of origin:	Dou toyeh, Tehran
Country of origin:	Iran
Date of collection:	30/12/2016
Host species:	cattle
Serotype:	A
Topotype:	ASIA
Lineage:	G-VII
Sublineage:	
Sequence length:	633
Ambiguities:	0
Material submitted for sequencing:	BTy1
Harvest date of material:	26/04/2017
Primers:	A-1C562F/EUR-2B52R; A-1C612F/EUR-2B52R
Received for sequencing:	08/05/2017
Created:	13/05/2017
Last updated:	13/05/2017

VIBASys IDs: sample 33581, genome 33582, sequence viba\_33583, sequencing info 33584

#### Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_25846	IRN/22/2015	cattle	98.9	0	A	ASIA	G-VII	
viba_25834	IRN/18/2015	cattle	98.7	0	A	ASIA	G-VII	
viba_25830	IRN/17/2015	cattle	98.7	0	A	ASIA	G-VII	
viba_25806	IRN/8/2015	cattle	98.6	0	A	ASIA	G-VII	
viba_25136	ARM/1/2015	cattle	98.4	0	A	ASIA	G-VII	
viba_32140	TUR /198/2015.808	cattle	98.4	0	A	ASIA	G-VII	
viba_25144	ARM/3/2015	cattle	98.4	0	A	ASIA	G-VII	
viba_25842	IRN/21/2015	cattle	98.4	0	A	ASIA	G-VII	
viba_32136	TUR/175/2015.712	cattle	98.4	0	A	ASIA	G-VII	
viba_25858	IRN/27/2015	cattle	98.3	0	A	ASIA	G-VII	

#### 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_864	IND/40/2000	cattle	90.2	0	A	ASIA	G-VII	
viba_843	SAU/16/95		87.9	0	A	ASIA	G-VII	
viba_336	IRN/1/96	bovine	83.8	1	A	ASIA	Iran-96	
viba_677	IRQ/24/64	bovine	83.3	0	A	ASIA	A22	
viba_475	IRN/22/99		82.4	0	A	ASIA	Iran-99	
viba_699	UKG/119/32		82.3	0	A	EURO-SA	A12	
viba_682	IRN/2/87	bovine	82.2	0	A	ASIA	Iran-87	
viba_308	IRN/9/2011	bovine	82.0	0	A	ASIA	Iran-05	QAZ-11
viba_403	TUR/1/2008	cattle	81.8	0	A	ASIA	Iran-05	ARD-07
viba_414	AFG/6/2007	bovine	81.6	0	A	ASIA	Iran-05	AFG-07

Virus sample name:	IRN/2/2017
Sender reference:	IR-95-44
Location of origin:	Dam shahr, Qom
Country of origin:	Iran
Date of collection:	07/01/2017
Host species:	cattle
Serotype:	A
Topotype:	ASIA
Lineage:	Iran-05
Sublineage:	FAR-09
Sequence length:	633
Ambiguities:	0
Material submitted for sequencing:	BTy1
Harvest date of material:	27/04/2017
Primers:	A-1C562F/EUR-2B52R; A-1C612F/EUR-2B52R
Received for sequencing:	08/05/2017
Created:	13/05/2017
Last updated:	13/05/2017
VIBASys IDs: sample 33585, genome 33586, sequence viba_33587, sequencing info 33588	

#### Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_33579	IRN/34/2016	cattle	99.7	0	A	ASIA	Iran-05	FAR-09
viba_33611	IRN/13/2017	sheep	99.5	0	A	ASIA	Iran-05	FAR-09
viba_33595	IRN/6/2017	sheep	99.5	0	A	ASIA	Iran-05	FAR-09
viba_33603	IRN/9/2017	cattle	99.5	0	A	ASIA	Iran-05	FAR-09
viba_33607	IRN/10/2017	cattle	99.1	0	A	ASIA	Iran-05	FAR-09
viba_25947	PAK/53/2015	cattle	97.9	0	A	ASIA	Iran-05	FAR-09
viba_22410	PAK/10/2014	cattle	96.5	0	A	ASIA	Iran-05	FAR-09
viba_20947	IRN/28/2013	cattle	96.5	0	A	ASIA	Iran-05	FAR-09
viba_22454	PAK/14/2014	cattle	96.5	0	A	ASIA	Iran-05	FAR-09
viba_20943	IRN/27/2013	cattle	96.5	0	A	ASIA	Iran-05	FAR-09

#### 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_331	AFG/10/2010		92.9	0	A	ASIA	Iran-05	HER-10
viba_636	IRN/78/2009		92.9	0	A	ASIA	Iran-05	FAR-09
viba_414	AFG/6/2007	bovine	92.4	0	A	ASIA	Iran-05	AFG-07
viba_594	IRN/1/2011	bovine	92.3	0	A	ASIA	Iran-05	FAR-11
viba_319	BAR/6/2008	bovine	91.9	0	A	ASIA	Iran-05	BAR-08
viba_403	TUR/1/2008	cattle	91.5	0	A	ASIA	Iran-05	ARD-07
viba_133	IRN/1/2005	cattle	91.5	0	A	ASIA	Iran-05	
viba_557	IRN/15/2012	bovine	91.0	0	A	ASIA	Iran-05	SIS-12
viba_791	IRN/125/2010	bovine	91.0	0	A	ASIA	Iran-05	SIS-10
viba_429	TUR/33/2008	cattle	90.4	0	A	ASIA	Iran-05	EZM-07

Virus sample name:	IRN/4/2017
Sender reference:	IR-95-46
Location of origin:	Azadi, Khozestan
Country of origin:	Iran
Date of collection:	11/01/2017
Host species:	cattle
Serotype:	A
Topotype:	ASIA
Lineage:	G-VII
Sublineage:	
Sequence length:	633
Ambiguities:	0
Material submitted for sequencing:	BTy1
Harvest date of material:	27/04/2017
Primers:	A-1C562F/EUR-2B52R; A-1C612F/EUR-2B52R
Received for sequencing:	08/05/2017
Created:	13/05/2017
Last updated:	13/05/2017
VIBASys IDs: sample 33589, genome 33590, sequence viba_33591, sequencing info 33592	

#### Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_25854	IRN/25/2015	cattle	99.1	0	A	ASIA	G-VII	
viba_25140	ARM/2/2015	cattle	99.1	0	A	ASIA	G-VII	
viba_25818	IRN/12/2015	cattle	99.1	0	A	ASIA	G-VII	
viba_25136	ARM/1/2015	cattle	98.9	0	A	ASIA	G-VII	
viba_32140	TUR/198/2015.808	cattle	98.9	0	A	ASIA	G-VII	
viba_25144	ARM/3/2015	cattle	98.9	0	A	ASIA	G-VII	
viba_32136	TUR/175/2015.712	cattle	98.9	0	A	ASIA	G-VII	
viba_25858	IRN/27/2015	cattle	98.7	0	A	ASIA	G-VII	
viba_32144	TUR/219/2015.865	cattle	98.7	0	A	ASIA	G-VII	
viba_32152	TUR/331/2015.923	cattle	98.7	0	A	ASIA	G-VII	

#### 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_843	SAU/16/95		90.6	0	A	ASIA	G-VII	
viba_864	IND/40/2000	cattle	90.3	0	A	ASIA	G-VII	
viba_336	IRN/1/96	bovine	84.4	1	A	ASIA	Iran-96	
viba_677	IRQ/24/64	bovine	84.1	0	A	ASIA	A22	
viba_682	IRN/2/87	bovine	83.6	0	A	ASIA	Iran-87	
viba_308	IRN/9/2011	bovine	82.9	0	A	ASIA	Iran-05	QAZ-11
viba_699	UKG/119/32		82.6	0	A	EURO-SA	A12	
viba_319	BAR/6/2008	bovine	82.3	0	A	ASIA	Iran-05	BAR-08
viba_589	Bangkok/TAI/60		82.2	0	A	ASIA	A15	
viba_403	TUR/1/2008	cattle	82.2	0	A	ASIA	Iran-05	ARD-07

Virus sample name:	IRN/6/2017
Sender reference:	IR-95-50
Location of origin:	Jaligh, East Azerbaijan
Country of origin:	Iran
Date of collection:	25/01/2017
Host species:	sheep
Serotype:	A
Topotype:	ASIA
Lineage:	Iran-05
Sublineage:	FAR-09
Sequence length:	633
Ambiguities:	0
Material submitted for sequencing:	BTy1
Harvest date of material:	27/04/2017
Primers:	A-1C562F/EUR-2B52R; A-1C612F/EUR-2B52R
Received for sequencing:	08/05/2017
Created:	13/05/2017
Last updated:	13/05/2017
VIBASys IDs: sample 33593, genome 33594, sequence viba_33595, sequencing info 33596	

#### Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_33611	IRN/13/2017	sheep	99.7	0	A	ASIA	Iran-05	FAR-09
viba_33587	IRN/2/2017	cattle	99.5	0	A	ASIA	Iran-05	FAR-09
viba_33579	IRN/34/2016	cattle	99.2	0	A	ASIA	Iran-05	FAR-09
viba_33607	IRN/10/2017	cattle	99.2	0	A	ASIA	Iran-05	FAR-09
viba_33603	IRN/9/2017	cattle	99.1	0	A	ASIA	Iran-05	FAR-09
viba_25947	PAK/53/2015	cattle	97.5	0	A	ASIA	Iran-05	FAR-09
viba_22410	PAK/10/2014	cattle	96.2	0	A	ASIA	Iran-05	FAR-09
viba_20947	IRN/28/2013	cattle	96.2	0	A	ASIA	Iran-05	FAR-09
viba_22454	PAK/14/2014	cattle	96.2	0	A	ASIA	Iran-05	FAR-09
viba_20943	IRN/27/2013	cattle	96.2	0	A	ASIA	Iran-05	FAR-09

#### 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_331	AFG/10/2010		92.6	0	A	ASIA	Iran-05	HER-10
viba_636	IRN/78/2009		92.6	0	A	ASIA	Iran-05	FAR-09
viba_414	AFG/6/2007	bovine	92.1	0	A	ASIA	Iran-05	AFG-07
viba_594	IRN/1/2011	bovine	92.0	0	A	ASIA	Iran-05	FAR-11
viba_319	BAR/6/2008	bovine	91.6	0	A	ASIA	Iran-05	BAR-08
viba_403	TUR/1/2008	cattle	91.3	0	A	ASIA	Iran-05	ARD-07
viba_133	IRN/1/2005	cattle	91.2	0	A	ASIA	Iran-05	
viba_557	IRN/15/2012	bovine	90.7	0	A	ASIA	Iran-05	SIS-12
viba_791	IRN/125/2010	bovine	90.7	0	A	ASIA	Iran-05	SIS-10
viba_429	TUR/33/2008	cattle	90.0	0	A	ASIA	Iran-05	EZM-07

Virus sample name:	IRN/7/2017
Sender reference:	IR-95-56
Location of origin:	Abasi complex, Sistan & Baluchestan
Country of origin:	Iran
Date of collection:	31/01/2017
Host species:	cattle
Serotype:	A
Topotype:	ASIA
Lineage:	Iran-05
Sublineage:	FAR-11
Sequence length:	633
Ambiguities:	0
Material submitted for sequencing:	BTy1
Harvest date of material:	27/04/2017
Primers:	A-1C562F/EUR-2B52R; A-1C612F/EUR-2B52R
Received for sequencing:	08/05/2017
Created:	13/05/2017
Last updated:	13/05/2017
VIBASys IDs: sample 33597, genome 33598, sequence viba_33599, sequencing info 33600	

### Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_594	IRN/1/2011	bovine	95.7	0	A	ASIA	Iran-05	FAR-11
viba_33321	BAL/PAK/iso-2/2011_A	cattle	95.4	0	A	ASIA	Iran-05	FAR-11
viba_21055	PAK/1/2013	water buffalo	94.8	0	A	ASIA	Iran-05	FAR-11
viba_19323	PAK/48/2012	cattle	94.8	0	A	ASIA	Iran-05	FAR-11
viba_20768	AFG/32/2013	cattle	94.6	0	A	ASIA	Iran-05	FAR-11
viba_21075	PAK/11/2013	cattle	94.5	0	A	ASIA	Iran-05	FAR-11
viba_21083	PAK/14/2013	cattle	94.5	0	A	ASIA	Iran-05	FAR-11
viba_21079	PAK/13/2013	water buffalo	94.5	0	A	ASIA	Iran-05	FAR-11
viba_22418	PAK/23/2014	water buffalo	94.5	0	A	ASIA	Iran-05	FAR-11
viba_21063	PAK/5/2013	cattle	94.5	0	A	ASIA	Iran-05	FAR-11

### 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_594	IRN/1/2011	bovine	95.7	0	A	ASIA	Iran-05	FAR-11
viba_557	IRN/15/2012	bovine	92.1	0	A	ASIA	Iran-05	SIS-12
viba_414	AFG/6/2007	bovine	92.0	0	A	ASIA	Iran-05	AFG-07
viba_636	IRN/78/2009		91.6	0	A	ASIA	Iran-05	FAR-09
viba_331	AFG/10/2010		91.3	0	A	ASIA	Iran-05	HER-10
viba_403	TUR/1/2008	cattle	90.8	0	A	ASIA	Iran-05	ARD-07
viba_319	BAR/6/2008	bovine	90.7	0	A	ASIA	Iran-05	BAR-08
viba_133	IRN/1/2005	cattle	90.7	0	A	ASIA	Iran-05	
viba_780	IRN/9/2010	cattle	89.7	0	A	ASIA	Iran-05	ESF-10
viba_791	IRN/125/2010	bovine	89.7	0	A	ASIA	Iran-05	SIS-10

Virus sample name:	IRN/9/2017
Sender reference:	IR-95-51
Location of origin:	Ghale sadri, Qom
Country of origin:	Iran
Date of collection:	15/02/2017
Host species:	cattle
Serotype:	A
Topotype:	ASIA
Lineage:	Iran-05
Sublineage:	FAR-09
Sequence length:	633
Ambiguities:	0
Material submitted for sequencing:	BTy1
Harvest date of material:	27/04/2017
Primers:	A-1C562F/EUR-2B52R; A-1C612F/EUR-2B52R
Received for sequencing:	08/05/2017
Created:	13/05/2017
Last updated:	13/05/2017
VIBASys IDs: sample 33601, genome 33602, sequence viba_33603, sequencing info 33604	

#### Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_33587	IRN/2/2017	cattle	99.5	0	A	ASIA	Iran-05	FAR-09
viba_33579	IRN/34/2016	cattle	99.2	0	A	ASIA	Iran-05	FAR-09
viba_33611	IRN/13/2017	sheep	99.1	0	A	ASIA	Iran-05	FAR-09
viba_33595	IRN/6/2017	sheep	99.1	0	A	ASIA	Iran-05	FAR-09
viba_33607	IRN/10/2017	cattle	98.6	0	A	ASIA	Iran-05	FAR-09
viba_25947	PAK/53/2015	cattle	97.5	0	A	ASIA	Iran-05	FAR-09
viba_22410	PAK/10/2014	cattle	96.1	0	A	ASIA	Iran-05	FAR-09
viba_20947	IRN/28/2013	cattle	96.1	0	A	ASIA	Iran-05	FAR-09
viba_22454	PAK/14/2014	cattle	96.1	0	A	ASIA	Iran-05	FAR-09
viba_20943	IRN/27/2013	cattle	96.1	0	A	ASIA	Iran-05	FAR-09

#### 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_331	AFG/10/2010		92.6	0	A	ASIA	Iran-05	HER-10
viba_636	IRN/78/2009		92.6	0	A	ASIA	Iran-05	FAR-09
viba_414	AFG/6/2007	bovine	92.4	0	A	ASIA	Iran-05	AFG-07
viba_594	IRN/1/2011	bovine	92.3	0	A	ASIA	Iran-05	FAR-11
viba_319	BAR/6/2008	bovine	91.9	0	A	ASIA	Iran-05	BAR-08
viba_403	TUR/1/2008	cattle	91.5	0	A	ASIA	Iran-05	ARD-07
viba_133	IRN/1/2005	cattle	91.5	0	A	ASIA	Iran-05	
viba_429	TUR/33/2008	cattle	90.7	0	A	ASIA	Iran-05	EZM-07
viba_557	IRN/15/2012	bovine	90.7	0	A	ASIA	Iran-05	SIS-12
viba_791	IRN/125/2010	bovine	90.7	0	A	ASIA	Iran-05	SIS-10



Virus sample name:	IRN/10/2017
Sender reference:	IR-95-62
Location of origin:	Dam shahr, Qom
Country of origin:	Iran
Date of collection:	20/02/2017
Host species:	cattle
Serotype:	A
Topotype:	ASIA
Lineage:	Iran-05
Sublineage:	FAR-09
Sequence length:	633
Ambiguities:	0
Material submitted for sequencing:	BTy1
Harvest date of material:	27/04/2017
Primers:	A-1C612F/EUR-2B52R
Received for sequencing:	08/05/2017
Created:	16/05/2017
Last updated:	16/05/2017
VIBASys IDs: sample 33605, genome 33606, sequence viba_33607, sequencing info 33608	

#### Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_33611	IRN/13/2017	sheep	99.2	0	A	ASIA	Iran-05	FAR-09
viba_33595	IRN/6/2017	sheep	99.2	0	A	ASIA	Iran-05	FAR-09
viba_33587	IRN/2/2017	cattle	99.1	0	A	ASIA	Iran-05	FAR-09
viba_33579	IRN/34/2016	cattle	98.7	0	A	ASIA	Iran-05	FAR-09
viba_33603	IRN/9/2017	cattle	98.6	0	A	ASIA	Iran-05	FAR-09
viba_25947	PAK/53/2015	cattle	97.0	0	A	ASIA	Iran-05	FAR-09
viba_22410	PAK/10/2014	cattle	95.6	0	A	ASIA	Iran-05	FAR-09
viba_20947	IRN/28/2013	cattle	95.6	0	A	ASIA	Iran-05	FAR-09
viba_22454	PAK/14/2014	cattle	95.6	0	A	ASIA	Iran-05	FAR-09
viba_20943	IRN/27/2013	cattle	95.6	0	A	ASIA	Iran-05	FAR-09

#### 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_331	AFG/10/2010		92.3	0	A	ASIA	Iran-05	HER-10
viba_636	IRN/78/2009		91.9	0	A	ASIA	Iran-05	FAR-09
viba_594	IRN/1/2011	bovine	91.6	0	A	ASIA	Iran-05	FAR-11
viba_414	AFG/6/2007	bovine	91.5	0	A	ASIA	Iran-05	AFG-07
viba_403	TUR/1/2008	cattle	91.2	0	A	ASIA	Iran-05	ARD-07
viba_319	BAR/6/2008	bovine	91.0	0	A	ASIA	Iran-05	BAR-08
viba_133	IRN/1/2005	cattle	90.8	0	A	ASIA	Iran-05	
viba_791	IRN/125/2010	bovine	90.7	0	A	ASIA	Iran-05	SIS-10
viba_557	IRN/15/2012	bovine	90.4	0	A	ASIA	Iran-05	SIS-12
viba_429	TUR/33/2008	cattle	89.7	0	A	ASIA	Iran-05	EZM-07

Virus sample name:	IRN/13/2017
Sender reference:	IR-95-61
Location of origin:	Bager abad, Qom
Country of origin:	Iran
Date of collection:	25/02/2017
Host species:	sheep
Serotype:	A
Topotype:	ASIA
Lineage:	Iran-05
Sublineage:	FAR-09
Sequence length:	633
Ambiguities:	0
Material submitted for sequencing:	BTy1
Harvest date of material:	27/04/2017
Primers:	A-1C562F/EUR-2B52R; A-1C612F/EUR-2B52R
Received for sequencing:	08/05/2017
Created:	13/05/2017
Last updated:	13/05/2017
VIBASys IDs: sample 33609, genome 33610, sequence viba_33611, sequencing info 33612	

#### Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_33595	IRN/6/2017	sheep	99.7	0	A	ASIA	Iran-05	FAR-09
viba_33587	IRN/2/2017	cattle	99.5	0	A	ASIA	Iran-05	FAR-09
viba_33579	IRN/34/2016	cattle	99.2	0	A	ASIA	Iran-05	FAR-09
viba_33607	IRN/10/2017	cattle	99.2	0	A	ASIA	Iran-05	FAR-09
viba_33603	IRN/9/2017	cattle	99.1	0	A	ASIA	Iran-05	FAR-09
viba_25947	PAK/53/2015	cattle	97.5	0	A	ASIA	Iran-05	FAR-09
viba_22410	PAK/10/2014	cattle	96.1	0	A	ASIA	Iran-05	FAR-09
viba_20947	IRN/28/2013	cattle	96.1	0	A	ASIA	Iran-05	FAR-09
viba_22454	PAK/14/2014	cattle	96.1	0	A	ASIA	Iran-05	FAR-09
viba_20943	IRN/27/2013	cattle	96.1	0	A	ASIA	Iran-05	FAR-09

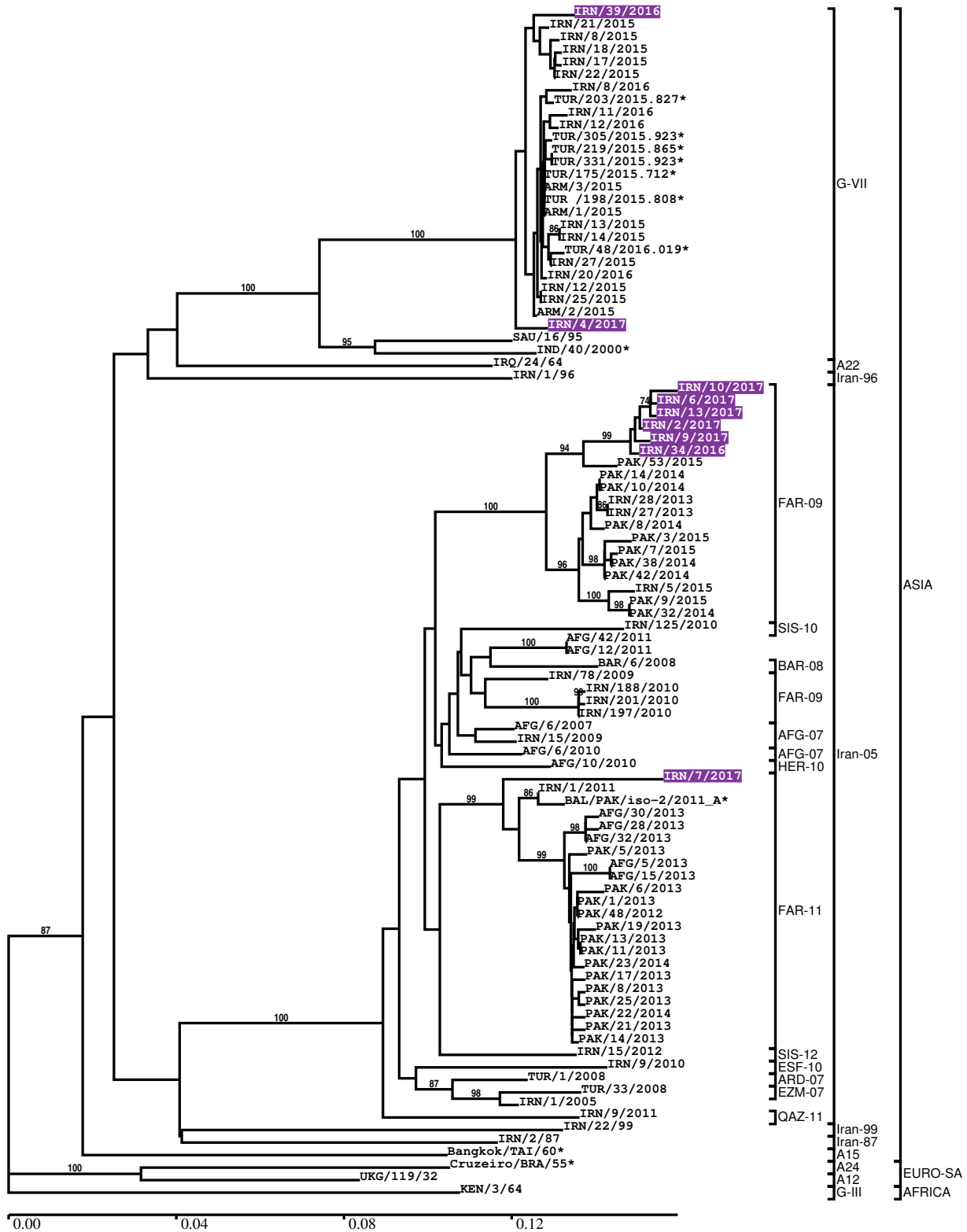
#### Most Closely Related Prototype Sequences

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_331	AFG/10/2010		92.4	0	A	ASIA	Iran-05	HER-10
viba_636	IRN/78/2009		92.4	0	A	ASIA	Iran-05	FAR-09
viba_594	IRN/1/2011	bovine	92.1	0	A	ASIA	Iran-05	FAR-11
viba_414	AFG/6/2007	bovine	91.9	0	A	ASIA	Iran-05	AFG-07
viba_319	BAR/6/2008	bovine	91.5	0	A	ASIA	Iran-05	BAR-08
viba_403	TUR/1/2008	cattle	91.3	0	A	ASIA	Iran-05	ARD-07
viba_133	IRN/1/2005	cattle	91.3	0	A	ASIA	Iran-05	
viba_557	IRN/15/2012	bovine	90.6	0	A	ASIA	Iran-05	SIS-12
viba_791	IRN/125/2010	bovine	90.5	0	A	ASIA	Iran-05	SIS-10
viba_429	TUR/33/2008	cattle	90.2	0	A	ASIA	Iran-05	EZM-07

Report on FMDV A in Iran in 2016, 2017

Batch: WRLFMD/2017/00008



\*, not a WRLFMD Reference Number

## Analysis Parameters

VP1 subsequence extractor: vp1\_A  
 Query sequence set: WRLFMD/2017/00008-Iran-A (9 sequences)  
 Sequence database set: allseqs\_A (1651 sequences)  
 Prototype sequence set: !prototypes\_A (34 sequences)  
 Number of related sequences reported: 10  
 Minimal VP1 subsequence match length: 600  
 Sequence alignment method: muscle (default parameters)  
 Sequence alignment length: 633  
 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: 20  
 VIBASys version: master-1.1.0-17-gf69a4d1

## Sequences in the Phylogenetic Tree

All sequences in the tree are in taxonomic group FMDV/A

label	accession	host(s)	lab	country	taxonomic information
IRN/39/2016	n/a	cattle	WRLFMD	Iran	ASIA/G-VII
IRN/21/2015	n/a	cattle	WRLFMD	Iran	ASIA/G-VII
IRN/8/2015	n/a	cattle	WRLFMD	Iran	ASIA/G-VII
IRN/18/2015	n/a	cattle	WRLFMD	Iran	ASIA/G-VII
IRN/17/2015	n/a	cattle	WRLFMD	Iran	ASIA/G-VII
IRN/22/2015	n/a	cattle	WRLFMD	Iran	ASIA/G-VII
IRN/8/2016	n/a	cattle	WRLFMD	Iran	ASIA/G-VII
TUR/203/2015.827*	n/a	cattle	FMDI	Turkey	ASIA/G-VII
IRN/11/2016	n/a	cattle	WRLFMD	Iran	ASIA/G-VII
IRN/12/2016	n/a	cattle	WRLFMD	Iran	ASIA/G-VII
TUR/305/2015.923*	n/a	cattle	FMDI	Turkey	ASIA/G-VII
TUR/219/2015.865*	n/a	cattle	FMDI	Turkey	ASIA/G-VII
TUR/331/2015.923*	n/a	cattle	FMDI	Turkey	ASIA/G-VII
TUR/175/2015.712*	n/a	cattle	FMDI	Turkey	ASIA/G-VII
ARM/3/2015	n/a	cattle	ARRIAH	Armenia	ASIA/G-VII
TUR /198/2015.808*	n/a	cattle	FMDI	Turkey	ASIA/G-VII
ARM/1/2015	n/a	cattle	ARRIAH	Armenia	ASIA/G-VII
IRN/13/2015	n/a	cattle	WRLFMD	Iran	ASIA/G-VII
IRN/14/2015	n/a	cattle	WRLFMD	Iran	ASIA/G-VII
TUR/48/2016.019*	n/a	sheep	FMDI	Turkey	ASIA/G-VII
IRN/27/2015	n/a	cattle	WRLFMD	Iran	ASIA/G-VII
IRN/20/2016	n/a	cattle	WRLFMD	Iran	ASIA/G-VII
IRN/12/2015	n/a	cattle	WRLFMD	Iran	ASIA/G-VII
IRN/25/2015	n/a	cattle	WRLFMD	Iran	ASIA/G-VII
ARM/2/2015	n/a	cattle	ARRIAH	Armenia	ASIA/G-VII
IRN/4/2017	n/a	cattle	WRLFMD	Iran	ASIA/G-VII
SAU/16/95	EU553874	n/a	WRLFMD	Saudi Arabia	ASIA/G-VII
IND/40/2000*	AF390646	cattle	PD-FMD	India	ASIA/G-VII
IRQ/24/64	AY593763	bovine	PIADC	Iraq	ASIA/A22
IRN/1/96	EF208771	bovine	WRLFMD	Iran	ASIA/Iran-96
IRN/10/2017	n/a	cattle	WRLFMD	Iran	ASIA/Iran-05/FAR-09
IRN/6/2017	n/a	sheep	WRLFMD	Iran	ASIA/Iran-05/FAR-09
IRN/13/2017	n/a	sheep	WRLFMD	Iran	ASIA/Iran-05/FAR-09
IRN/2/2017	n/a	cattle	WRLFMD	Iran	ASIA/Iran-05/FAR-09
IRN/9/2017	n/a	cattle	WRLFMD	Iran	ASIA/Iran-05/FAR-09
IRN/34/2016	n/a	cattle	WRLFMD	Iran	ASIA/Iran-05/FAR-09

*continued on next page*

label	accession	host(s)	lab	country	taxonomic information
PAK/53/2015	n/a	cattle	WRLFMD	Pakistan	ASIA/Iran-05/FAR-09
PAK/14/2014	n/a	cattle	WRLFMD	Pakistan	ASIA/Iran-05/FAR-09
PAK/10/2014	n/a	cattle	WRLFMD	Pakistan	ASIA/Iran-05/FAR-09
IRN/28/2013	n/a	cattle	WRLFMD	Iran	ASIA/Iran-05/FAR-09
IRN/27/2013	n/a	cattle	WRLFMD	Iran	ASIA/Iran-05/FAR-09
PAK/8/2014	n/a	water buffalo	WRLFMD	Pakistan	ASIA/Iran-05/FAR-09
PAK/3/2015	n/a	cattle	WRLFMD	Pakistan	ASIA/Iran-05/FAR-09
PAK/7/2015	n/a	cattle	WRLFMD	Pakistan	ASIA/Iran-05/FAR-09
PAK/38/2014	n/a	cattle	WRLFMD	Pakistan	ASIA/Iran-05/FAR-09
PAK/42/2014	n/a	water buffalo	WRLFMD	Pakistan	ASIA/Iran-05/FAR-09
IRN/5/2015	n/a	cattle	WRLFMD	Iran	ASIA/Iran-05/FAR-09
PAK/9/2015	n/a	cattle	WRLFMD	Pakistan	ASIA/Iran-05/FAR-09
PAK/32/2014	n/a	cattle	WRLFMD	Pakistan	ASIA/Iran-05/FAR-09
IRN/125/2010	KY091296	bovine	WRLFMD	Iran	ASIA/Iran-05/SIS-10
AFG/42/2011	n/a	n/a	WRLFMD	Afghanistan	ASIA/Iran-05
AFG/12/2011	n/a	n/a	WRLFMD	Afghanistan	ASIA/Iran-05
BAR/6/2008	FJ755010	bovine	WRLFMD	Bahrain	ASIA/Iran-05/BAR-08
IRN/78/2009	KY091291	n/a	WRLFMD	Iran	ASIA/Iran-05/FAR-09
IRN/188/2010	n/a	cattle	WRLFMD	Iran	ASIA/Iran-05/FAR-09
IRN/201/2010	n/a	cattle	WRLFMD	Iran	ASIA/Iran-05/FAR-09
IRN/197/2010	n/a	cattle	WRLFMD	Iran	ASIA/Iran-05/FAR-09
AFG/6/2007	FJ755007	bovine	WRLFMD	Afghanistan	ASIA/Iran-05/AFG-07
IRN/15/2009	n/a	n/a	WRLFMD	Iran	ASIA/Iran-05/AFG-07
AFG/6/2010	n/a	n/a	WRLFMD	Afghanistan	ASIA/Iran-05/AFG-07
AFG/10/2010	KY091293	n/a	WRLFMD	Afghanistan	ASIA/Iran-05/HER-10
IRN/7/2017	n/a	cattle	WRLFMD	Iran	ASIA/Iran-05/FAR-11
IRN/1/2011	KY091292	bovine	WRLFMD	Iran	ASIA/Iran-05/FAR-11
BAL/PAK/iso-2/2011_A*	JX435106	cattle	ANSES	Pakistan	ASIA/Iran-05/FAR-11
AFG/30/2013	n/a	cattle	WRLFMD	Afghanistan	ASIA/Iran-05/FAR-11
AFG/28/2013	n/a	cattle	WRLFMD	Afghanistan	ASIA/Iran-05/FAR-11
AFG/32/2013	n/a	cattle	WRLFMD	Afghanistan	ASIA/Iran-05/FAR-11
PAK/5/2013	n/a	cattle	WRLFMD	Pakistan	ASIA/Iran-05/FAR-11
AFG/5/2013	n/a	cattle	WRLFMD	Afghanistan	ASIA/Iran-05/FAR-11
AFG/15/2013	n/a	cattle	WRLFMD	Afghanistan	ASIA/Iran-05/FAR-11
PAK/6/2013	n/a	cattle	WRLFMD	Pakistan	ASIA/Iran-05/FAR-11
PAK/1/2013	n/a	water buffalo	WRLFMD	Pakistan	ASIA/Iran-05/FAR-11
PAK/48/2012	n/a	cattle	WRLFMD	Pakistan	ASIA/Iran-05/FAR-11
PAK/19/2013	n/a	water buffalo	WRLFMD	Pakistan	ASIA/Iran-05/FAR-11
PAK/13/2013	n/a	water buffalo	WRLFMD	Pakistan	ASIA/Iran-05/FAR-11
PAK/11/2013	n/a	cattle	WRLFMD	Pakistan	ASIA/Iran-05/FAR-11
PAK/23/2014	n/a	water buffalo	WRLFMD	Pakistan	ASIA/Iran-05/FAR-11
PAK/17/2013	n/a	cattle	WRLFMD	Pakistan	ASIA/Iran-05/FAR-11
PAK/8/2013	n/a	cattle	WRLFMD	Pakistan	ASIA/Iran-05/FAR-11
PAK/25/2013	n/a	water buffalo	WRLFMD	Pakistan	ASIA/Iran-05/FAR-11
PAK/22/2014	n/a	cattle	WRLFMD	Pakistan	ASIA/Iran-05/FAR-11
PAK/21/2013	n/a	cattle	WRLFMD	Pakistan	ASIA/Iran-05/FAR-11
PAK/14/2013	n/a	cattle	WRLFMD	Pakistan	ASIA/Iran-05/FAR-11
IRN/15/2012	KY091297	bovine	WRLFMD	Iran	ASIA/Iran-05/SIS-12
IRN/9/2010	KY091290	cattle	WRLFMD	Iran	ASIA/Iran-05/ESF-10
TUR/1/2008	FJ755133	cattle	WRLFMD	Turkey	ASIA/Iran-05/ARD-07
TUR/33/2008	FJ755155	cattle	WRLFMD	Turkey	ASIA/Iran-05/EZM-07
IRN/1/2005	EF208769	cattle	WRLFMD	Iran	ASIA/Iran-05
IRN/9/2011	KY091295	bovine	WRLFMD	Iran	ASIA/Iran-05/QAZ-11
IRN/22/99	EF208772	n/a	WRLFMD	Iran	ASIA/Iran-99
IRN/2/87	EF208770	bovine	WRLFMD	Iran	ASIA/Iran-87
Bangkok/TAI/60*	AY593755	n/a	PIADC	Thailand	ASIA/A15
Cruzeiro/BRA/55*	AY593768	bovine	PIADC	Brazil	EURO-SA/A24
UKG/119/32	M10975	n/a	PIADC	United Kingdom	EURO-SA/A12
KEN/3/64	AY593761	n/a	PIADC	Kenya	AFRICA/G-III

\*, not a WRLFMD Reference Number

n/a, not available