

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

Genotyping Report

FMDV serotype: O
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/31/2016
Sender reference:	IR-95-41
Location of origin:	Kenareh, Fars
Country of origin:	Iran
Date of collection:	14/11/2016
Host species:	cattle
Serotype:	O
Topotype:	ME-SA
Lineage:	PanAsia-2
Sublineage:	ANT-10
Sequence length:	633
Ambiguities:	0
Material submitted for sequencing:	BTy1
Harvest date of material:	25/04/2017
Primers:	O-1C244F/EUR-2B52R; O-1C272F/EUR-2B52R
Received for sequencing:	08/05/2017
Created:	13/05/2017
Last updated:	13/05/2017

VIBASys IDs: sample 33613, genome 33614, sequence viba_33615, sequencing info 33616

Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_33623	IRN/36/2016	sheep	99.2	0	O	ME-SA	PanAsia-2	ANT-10
viba_33635	IRN/5/2017	cattle	99.2	0	O	ME-SA	PanAsia-2	ANT-10
viba_33631	IRN/3/2017	sheep	99.2	0	O	ME-SA	PanAsia-2	ANT-10
viba_33639	IRN/8/2017	cattle	99.1	0	O	ME-SA	PanAsia-2	ANT-10
viba_33619	IRN/35/2016	cattle	99.1	0	O	ME-SA	PanAsia-2	ANT-10
viba_33627	IRN/37/2016	cattle	99.1	0	O	ME-SA	PanAsia-2	ANT-10
viba_33643	IRN/11/2017	cattle	98.7	0	O	ME-SA	PanAsia-2	ANT-10
viba_21539	AFG/27/2013	cattle	97.2	0	O	ME-SA	PanAsia-2	ANT-10
viba_21536	AFG/23/2013	cattle	97.2	0	O	ME-SA	PanAsia-2	ANT-10
viba_22729	AFG/9/2014	cattle	97.2	0	O	ME-SA	PanAsia-2	ANT-10

Most Closely Related Prototype Sequences

see http://www.wrlfmd.org/fmd_genotyping/prototypes.htm

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_719	IRN/88/2009		94.2	0	O	ME-SA	PanAsia-2	ANT-10
viba_766	IRN/31/2009	cattle	92.1	0	O	ME-SA	PanAsia-2	FAR-09
viba_491	TUR/257/2008		91.6	0	O	ME-SA	PanAsia-2	TER-08
viba_354	PAK/16/2010	cattle	91.5	0	O	ME-SA	PanAsia-2	PUN-10
viba_650	IRN/8/2005	ovine	91.5	0	O	ME-SA	PanAsia-2	
viba_666	IRN/18/2010	cattle	91.0	0	O	ME-SA	PanAsia-2	BAL-09
viba_505	TUR/264/2009		90.7	0	O	ME-SA	PanAsia-2	SAN-09
viba_285	UKG/35/2001	porcine	90.0	0	O	ME-SA	PanAsia	
viba_860	IRN/6/2015	cattle	90.0	0	O	ME-SA	PanAsia-2	QOM-15
viba_850	NEP/1/2015	cattle	89.9	1	O	ME-SA	PanAsia-2	KAT-15

Virus sample name:	IRN/35/2016
Sender reference:	IR-95-45
Location of origin:	Dasht shirbad, Esfahan
Country of origin:	Iran
Date of collection:	14/12/2016
Host species:	cattle
Serotype:	O
Topotype:	ME-SA
Lineage:	PanAsia-2
Sublineage:	ANT-10
Sequence length:	633
Ambiguities:	0
Material submitted for sequencing:	BTy1
Harvest date of material:	26/04/2017
Primers:	O-1C244F/EUR-2B52R; O-1C272F/EUR-2B52R
Received for sequencing:	08/05/2017
Created:	13/05/2017
Last updated:	13/05/2017
VIBASys IDs: sample 33617, genome 33618, sequence viba_33619, sequencing info 33620	

Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_33623	IRN/36/2016	sheep	99.8	0	O	ME-SA	PanAsia-2	ANT-10
viba_33635	IRN/5/2017	cattle	99.8	0	O	ME-SA	PanAsia-2	ANT-10
viba_33631	IRN/3/2017	sheep	99.8	0	O	ME-SA	PanAsia-2	ANT-10
viba_33639	IRN/8/2017	cattle	99.7	0	O	ME-SA	PanAsia-2	ANT-10
viba_33627	IRN/37/2016	cattle	99.7	0	O	ME-SA	PanAsia-2	ANT-10
viba_33643	IRN/11/2017	cattle	99.4	0	O	ME-SA	PanAsia-2	ANT-10
viba_33615	IRN/31/2016	cattle	99.1	0	O	ME-SA	PanAsia-2	ANT-10
viba_21539	AFG/27/2013	cattle	97.2	0	O	ME-SA	PanAsia-2	ANT-10
viba_21536	AFG/23/2013	cattle	97.2	0	O	ME-SA	PanAsia-2	ANT-10
viba_22729	AFG/9/2014	cattle	97.2	0	O	ME-SA	PanAsia-2	ANT-10

Most Closely Related Prototype Sequences

see http://www.wrlfmd.org/fmd_genotyping/prototypes.htm

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_719	IRN/88/2009		94.0	0	O	ME-SA	PanAsia-2	ANT-10
viba_766	IRN/31/2009	cattle	92.1	0	O	ME-SA	PanAsia-2	FAR-09
viba_354	PAK/16/2010	cattle	91.5	0	O	ME-SA	PanAsia-2	PUN-10
viba_491	TUR/257/2008		91.3	0	O	ME-SA	PanAsia-2	TER-08
viba_650	IRN/8/2005	ovine	91.3	0	O	ME-SA	PanAsia-2	
viba_666	IRN/18/2010	cattle	90.7	0	O	ME-SA	PanAsia-2	BAL-09
viba_505	TUR/264/2009		90.7	0	O	ME-SA	PanAsia-2	SAN-09
viba_285	UKG/35/2001	porcine	90.0	0	O	ME-SA	PanAsia	
viba_860	IRN/6/2015	cattle	89.7	0	O	ME-SA	PanAsia-2	QOM-15
viba_850	NEP/1/2015	cattle	89.6	1	O	ME-SA	PanAsia-2	KAT-15

Virus sample name:	IRN/36/2016
Sender reference:	IR-95-60
Location of origin:	Matin abad, Esfahan
Country of origin:	Iran
Date of collection:	22/12/2016
Host species:	sheep
Serotype:	O
Topotype:	ME-SA
Lineage:	PanAsia-2
Sublineage:	ANT-10
Sequence length:	633
Ambiguities:	0
Material submitted for sequencing:	BTy1
Harvest date of material:	26/04/2017
Primers:	O-1C244F/EUR-2B52R; O-1C272F/EUR-2B52R
Received for sequencing:	08/05/2017
Created:	16/05/2017
Last updated:	16/05/2017

VIBASys IDs: sample 33621, genome 33622, sequence viba_33623, sequencing info 33624

Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_33635	IRN/5/2017	cattle	100.0	0	O	ME-SA	PanAsia-2	ANT-10
viba_33631	IRN/3/2017	sheep	100.0	0	O	ME-SA	PanAsia-2	ANT-10
viba_33639	IRN/8/2017	cattle	99.8	0	O	ME-SA	PanAsia-2	ANT-10
viba_33619	IRN/35/2016	cattle	99.8	0	O	ME-SA	PanAsia-2	ANT-10
viba_33627	IRN/37/2016	cattle	99.8	0	O	ME-SA	PanAsia-2	ANT-10
viba_33643	IRN/11/2017	cattle	99.5	0	O	ME-SA	PanAsia-2	ANT-10
viba_33615	IRN/31/2016	cattle	99.2	0	O	ME-SA	PanAsia-2	ANT-10
viba_21539	AFG/27/2013	cattle	97.3	0	O	ME-SA	PanAsia-2	ANT-10
viba_21536	AFG/23/2013	cattle	97.3	0	O	ME-SA	PanAsia-2	ANT-10
viba_22729	AFG/9/2014	cattle	97.3	0	O	ME-SA	PanAsia-2	ANT-10

Most Closely Related Prototype Sequences

see http://www.wrlfmd.org/fmd_genotyping/prototypes.htm

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_719	IRN/88/2009		93.9	0	O	ME-SA	PanAsia-2	ANT-10
viba_766	IRN/31/2009	cattle	91.9	0	O	ME-SA	PanAsia-2	FAR-09
viba_354	PAK/16/2010	cattle	91.3	0	O	ME-SA	PanAsia-2	PUN-10
viba_491	TUR/257/2008		91.2	0	O	ME-SA	PanAsia-2	TER-08
viba_650	IRN/8/2005	ovine	91.2	0	O	ME-SA	PanAsia-2	
viba_666	IRN/18/2010	cattle	90.8	0	O	ME-SA	PanAsia-2	BAL-09
viba_505	TUR/264/2009		90.5	0	O	ME-SA	PanAsia-2	SAN-09
viba_285	UKG/35/2001	porcine	90.2	0	O	ME-SA	PanAsia	
viba_860	IRN/6/2015	cattle	89.9	0	O	ME-SA	PanAsia-2	QOM-15
viba_850	NEP/1/2015	cattle	89.7	1	O	ME-SA	PanAsia-2	KAT-15

Virus sample name:	IRN/37/2016
Sender reference:	IR-95-47
Location of origin:	Kousaj, West Azerbaijan
Country of origin:	Iran
Date of collection:	24/12/2016
Host species:	cattle
Serotype:	O
Topotype:	ME-SA
Lineage:	PanAsia-2
Sublineage:	ANT-10
Sequence length:	633
Ambiguities:	0
Material submitted for sequencing:	BTy1
Harvest date of material:	26/04/2017
Primers:	O-1C244F/EUR-2B52R; O-1C272F/EUR-2B52R
Received for sequencing:	08/05/2017
Created:	13/05/2017
Last updated:	13/05/2017
VIBASys IDs: sample 33625, genome 33626, sequence viba_33627, sequencing info 33628	

Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_33623	IRN/36/2016	sheep	99.8	0	O	ME-SA	PanAsia-2	ANT-10
viba_33635	IRN/5/2017	cattle	99.8	0	O	ME-SA	PanAsia-2	ANT-10
viba_33631	IRN/3/2017	sheep	99.8	0	O	ME-SA	PanAsia-2	ANT-10
viba_33639	IRN/8/2017	cattle	99.7	0	O	ME-SA	PanAsia-2	ANT-10
viba_33619	IRN/35/2016	cattle	99.7	0	O	ME-SA	PanAsia-2	ANT-10
viba_33643	IRN/11/2017	cattle	99.4	0	O	ME-SA	PanAsia-2	ANT-10
viba_33615	IRN/31/2016	cattle	99.1	0	O	ME-SA	PanAsia-2	ANT-10
viba_21539	AFG/27/2013	cattle	97.2	0	O	ME-SA	PanAsia-2	ANT-10
viba_21536	AFG/23/2013	cattle	97.2	0	O	ME-SA	PanAsia-2	ANT-10
viba_22729	AFG/9/2014	cattle	97.2	0	O	ME-SA	PanAsia-2	ANT-10

Most Closely Related Prototype Sequences

see http://www.wrlfmd.org/fmd_genotyping/prototypes.htm

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_719	IRN/88/2009		93.7	0	O	ME-SA	PanAsia-2	ANT-10
viba_766	IRN/31/2009	cattle	91.8	0	O	ME-SA	PanAsia-2	FAR-09
viba_354	PAK/16/2010	cattle	91.5	0	O	ME-SA	PanAsia-2	PUN-10
viba_491	TUR/257/2008		91.0	0	O	ME-SA	PanAsia-2	TER-08
viba_650	IRN/8/2005	ovine	91.0	0	O	ME-SA	PanAsia-2	
viba_666	IRN/18/2010	cattle	90.7	0	O	ME-SA	PanAsia-2	BAL-09
viba_505	TUR/264/2009		90.4	0	O	ME-SA	PanAsia-2	SAN-09
viba_285	UKG/35/2001	porcine	90.0	0	O	ME-SA	PanAsia	
viba_860	IRN/6/2015	cattle	89.7	0	O	ME-SA	PanAsia-2	QOM-15
viba_850	NEP/1/2015	cattle	89.6	1	O	ME-SA	PanAsia-2	KAT-15

Virus sample name:	IRN/3/2017
Sender reference:	IR-95-52
Location of origin:	Dam shahr, Qom
Country of origin:	Iran
Date of collection:	07/01/2017
Host species:	sheep
Serotype:	O
Topotype:	ME-SA
Lineage:	PanAsia-2
Sublineage:	ANT-10
Sequence length:	633
Ambiguities:	0
Material submitted for sequencing:	BTy1
Harvest date of material:	27/04/2017
Primers:	O-1C244F/EUR-2B52R; O-1C272F/EUR-2B52R
Received for sequencing:	08/05/2017
Created:	13/05/2017
Last updated:	13/05/2017
VIBASys IDs: sample 33629, genome 33630, sequence viba_33631, sequencing info 33632	

Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_33623	IRN/36/2016	sheep	100.0	0	O	ME-SA	PanAsia-2	ANT-10
viba_33635	IRN/5/2017	cattle	100.0	0	O	ME-SA	PanAsia-2	ANT-10
viba_33639	IRN/8/2017	cattle	99.8	0	O	ME-SA	PanAsia-2	ANT-10
viba_33619	IRN/35/2016	cattle	99.8	0	O	ME-SA	PanAsia-2	ANT-10
viba_33627	IRN/37/2016	cattle	99.8	0	O	ME-SA	PanAsia-2	ANT-10
viba_33643	IRN/11/2017	cattle	99.5	0	O	ME-SA	PanAsia-2	ANT-10
viba_33615	IRN/31/2016	cattle	99.2	0	O	ME-SA	PanAsia-2	ANT-10
viba_21539	AFG/27/2013	cattle	97.3	0	O	ME-SA	PanAsia-2	ANT-10
viba_21536	AFG/23/2013	cattle	97.3	0	O	ME-SA	PanAsia-2	ANT-10
viba_22729	AFG/9/2014	cattle	97.3	0	O	ME-SA	PanAsia-2	ANT-10

Most Closely Related Prototype Sequences

see http://www.wrlfmd.org/fmd_genotyping/prototypes.htm

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_719	IRN/88/2009		93.9	0	O	ME-SA	PanAsia-2	ANT-10
viba_766	IRN/31/2009	cattle	91.9	0	O	ME-SA	PanAsia-2	FAR-09
viba_354	PAK/16/2010	cattle	91.3	0	O	ME-SA	PanAsia-2	PUN-10
viba_491	TUR/257/2008		91.2	0	O	ME-SA	PanAsia-2	TER-08
viba_650	IRN/8/2005	ovine	91.2	0	O	ME-SA	PanAsia-2	
viba_666	IRN/18/2010	cattle	90.8	0	O	ME-SA	PanAsia-2	BAL-09
viba_505	TUR/264/2009		90.5	0	O	ME-SA	PanAsia-2	SAN-09
viba_285	UKG/35/2001	porcine	90.2	0	O	ME-SA	PanAsia	
viba_860	IRN/6/2015	cattle	89.9	0	O	ME-SA	PanAsia-2	QOM-15
viba_850	NEP/1/2015	cattle	89.7	1	O	ME-SA	PanAsia-2	KAT-15

Virus sample name:	IRN/5/2017
Sender reference:	IR-95-42
Location of origin:	Ghale sadri, Qom
Country of origin:	Iran
Date of collection:	12/01/2017
Host species:	cattle
Serotype:	O
Topotype:	ME-SA
Lineage:	PanAsia-2
Sublineage:	ANT-10
Sequence length:	633
Ambiguities:	0
Material submitted for sequencing:	BTy1
Harvest date of material:	27/04/2017
Primers:	O-1C244F/EUR-2B52R; O-1C272F/EUR-2B52R
Received for sequencing:	08/05/2017
Created:	13/05/2017
Last updated:	13/05/2017
VIBASys IDs: sample 33633, genome 33634, sequence viba_33635, sequencing info 33636	

Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_33623	IRN/36/2016	sheep	100.0	0	O	ME-SA	PanAsia-2	ANT-10
viba_33631	IRN/3/2017	sheep	100.0	0	O	ME-SA	PanAsia-2	ANT-10
viba_33639	IRN/8/2017	cattle	99.8	0	O	ME-SA	PanAsia-2	ANT-10
viba_33619	IRN/35/2016	cattle	99.8	0	O	ME-SA	PanAsia-2	ANT-10
viba_33627	IRN/37/2016	cattle	99.8	0	O	ME-SA	PanAsia-2	ANT-10
viba_33643	IRN/11/2017	cattle	99.5	0	O	ME-SA	PanAsia-2	ANT-10
viba_33615	IRN/31/2016	cattle	99.2	0	O	ME-SA	PanAsia-2	ANT-10
viba_21539	AFG/27/2013	cattle	97.3	0	O	ME-SA	PanAsia-2	ANT-10
viba_21536	AFG/23/2013	cattle	97.3	0	O	ME-SA	PanAsia-2	ANT-10
viba_22729	AFG/9/2014	cattle	97.3	0	O	ME-SA	PanAsia-2	ANT-10

Most Closely Related Prototype Sequences

see http://www.wrlfmd.org/fmd_genotyping/prototypes.htm

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_719	IRN/88/2009		93.9	0	O	ME-SA	PanAsia-2	ANT-10
viba_766	IRN/31/2009	cattle	91.9	0	O	ME-SA	PanAsia-2	FAR-09
viba_354	PAK/16/2010	cattle	91.3	0	O	ME-SA	PanAsia-2	PUN-10
viba_491	TUR/257/2008		91.2	0	O	ME-SA	PanAsia-2	TER-08
viba_650	IRN/8/2005	ovine	91.2	0	O	ME-SA	PanAsia-2	
viba_666	IRN/18/2010	cattle	90.8	0	O	ME-SA	PanAsia-2	BAL-09
viba_505	TUR/264/2009		90.5	0	O	ME-SA	PanAsia-2	SAN-09
viba_285	UKG/35/2001	porcine	90.2	0	O	ME-SA	PanAsia	
viba_860	IRN/6/2015	cattle	89.9	0	O	ME-SA	PanAsia-2	QOM-15
viba_850	NEP/1/2015	cattle	89.7	1	O	ME-SA	PanAsia-2	KAT-15

Virus sample name:	IRN/8/2017
Sender reference:	IR-95-48
Location of origin:	Damz abad, Tehran
Country of origin:	Iran
Date of collection:	02/02/2017
Host species:	cattle
Serotype:	O
Topotype:	ME-SA
Lineage:	PanAsia-2
Sublineage:	ANT-10
Sequence length:	633
Ambiguities:	0
Material submitted for sequencing:	BTy1
Harvest date of material:	27/04/2017
Primers:	O-1C244F/EUR-2B52R; O-1C272F/EUR-2B52R
Received for sequencing:	08/05/2017
Created:	13/05/2017
Last updated:	13/05/2017

VIBASys IDs: sample 33637, genome 33638, sequence viba_33639, sequencing info 33640

Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_33623	IRN/36/2016	sheep	99.8	0	O	ME-SA	PanAsia-2	ANT-10
viba_33635	IRN/5/2017	cattle	99.8	0	O	ME-SA	PanAsia-2	ANT-10
viba_33631	IRN/3/2017	sheep	99.8	0	O	ME-SA	PanAsia-2	ANT-10
viba_33619	IRN/35/2016	cattle	99.7	0	O	ME-SA	PanAsia-2	ANT-10
viba_33627	IRN/37/2016	cattle	99.7	0	O	ME-SA	PanAsia-2	ANT-10
viba_33643	IRN/11/2017	cattle	99.4	0	O	ME-SA	PanAsia-2	ANT-10
viba_33615	IRN/31/2016	cattle	99.1	0	O	ME-SA	PanAsia-2	ANT-10
viba_21539	AFG/27/2013	cattle	97.2	0	O	ME-SA	PanAsia-2	ANT-10
viba_21536	AFG/23/2013	cattle	97.2	0	O	ME-SA	PanAsia-2	ANT-10
viba_22729	AFG/9/2014	cattle	97.2	0	O	ME-SA	PanAsia-2	ANT-10

Most Closely Related Prototype Sequences

see http://www.wrlfmd.org/fmd_genotyping/prototypes.htm

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_719	IRN/88/2009		94.0	0	O	ME-SA	PanAsia-2	ANT-10
viba_766	IRN/31/2009	cattle	92.1	0	O	ME-SA	PanAsia-2	FAR-09
viba_354	PAK/16/2010	cattle	91.5	0	O	ME-SA	PanAsia-2	PUN-10
viba_491	TUR/257/2008		91.3	0	O	ME-SA	PanAsia-2	TER-08
viba_650	IRN/8/2005	ovine	91.3	0	O	ME-SA	PanAsia-2	
viba_666	IRN/18/2010	cattle	91.0	0	O	ME-SA	PanAsia-2	BAL-09
viba_505	TUR/264/2009		90.7	0	O	ME-SA	PanAsia-2	SAN-09
viba_285	UKG/35/2001	porcine	90.4	0	O	ME-SA	PanAsia	
viba_860	IRN/6/2015	cattle	90.0	0	O	ME-SA	PanAsia-2	QOM-15
viba_850	NEP/1/2015	cattle	89.9	1	O	ME-SA	PanAsia-2	KAT-15

Virus sample name:	IRN/11/2017
Sender reference:	IR-95-64
Location of origin:	Dam shahr, Qom
Country of origin:	Iran
Date of collection:	20/02/2017
Host species:	cattle
Serotype:	O
Topotype:	ME-SA
Lineage:	PanAsia-2
Sublineage:	ANT-10
Sequence length:	633
Ambiguities:	0
Material submitted for sequencing:	BTy1
Harvest date of material:	27/04/2017
Primers:	O-1C244F/EUR-2B52R; O-1C272F/EUR-2B52R
Received for sequencing:	08/05/2017
Created:	13/05/2017
Last updated:	13/05/2017
VIBASys IDs: sample 33641, genome 33642, sequence viba_33643, sequencing info 33644	

Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_33623	IRN/36/2016	sheep	99.5	0	O	ME-SA	PanAsia-2	ANT-10
viba_33635	IRN/5/2017	cattle	99.5	0	O	ME-SA	PanAsia-2	ANT-10
viba_33631	IRN/3/2017	sheep	99.5	0	O	ME-SA	PanAsia-2	ANT-10
viba_33639	IRN/8/2017	cattle	99.4	0	O	ME-SA	PanAsia-2	ANT-10
viba_33619	IRN/35/2016	cattle	99.4	0	O	ME-SA	PanAsia-2	ANT-10
viba_33627	IRN/37/2016	cattle	99.4	0	O	ME-SA	PanAsia-2	ANT-10
viba_33615	IRN/31/2016	cattle	98.7	0	O	ME-SA	PanAsia-2	ANT-10
viba_21539	AFG/27/2013	cattle	96.8	0	O	ME-SA	PanAsia-2	ANT-10
viba_21536	AFG/23/2013	cattle	96.8	0	O	ME-SA	PanAsia-2	ANT-10
viba_22729	AFG/9/2014	cattle	96.8	0	O	ME-SA	PanAsia-2	ANT-10

Most Closely Related Prototype Sequences

see http://www.wrlfmd.org/fmd_genotyping/prototypes.htm

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_719	IRN/88/2009		93.7	0	O	ME-SA	PanAsia-2	ANT-10
viba_766	IRN/31/2009	cattle	91.5	0	O	ME-SA	PanAsia-2	FAR-09
viba_491	TUR/257/2008		91.0	0	O	ME-SA	PanAsia-2	TER-08
viba_354	PAK/16/2010	cattle	90.8	0	O	ME-SA	PanAsia-2	PUN-10
viba_666	IRN/18/2010	cattle	90.7	0	O	ME-SA	PanAsia-2	BAL-09
viba_650	IRN/8/2005	ovine	90.7	0	O	ME-SA	PanAsia-2	
viba_505	TUR/264/2009		90.4	0	O	ME-SA	PanAsia-2	SAN-09
viba_285	UKG/35/2001	porcine	90.0	0	O	ME-SA	PanAsia	
viba_860	IRN/6/2015	cattle	89.7	0	O	ME-SA	PanAsia-2	QOM-15
viba_850	NEP/1/2015	cattle	89.6	1	O	ME-SA	PanAsia-2	KAT-15

Virus sample name:	IRN/12/2017
Sender reference:	IR-95-49
Location of origin:	Mohamadeih, Markazi
Country of origin:	Iran
Date of collection:	23/02/2017
Host species:	cattle
Serotype:	O
Topotype:	ME-SA
Lineage:	PanAsia-2
Sublineage:	QOM-15
Sequence length:	633
Ambiguities:	0
Material submitted for sequencing:	BTy1
Harvest date of material:	27/04/2017
Primers:	O-1C244F/EUR-2B52R; O-1C272F/EUR-2B52R
Received for sequencing:	08/05/2017
Created:	13/05/2017
Last updated:	13/05/2017
VIBASys IDs: sample 33645, genome 33646, sequence viba_33647, sequencing info 33648	

Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_23744	KUW/4/2016	cattle	99.2	0	O	ME-SA	PanAsia-2	QOM-15
viba_27677	IRN/13/2016	cattle	99.2	0	O	ME-SA	PanAsia-2	QOM-15
viba_27669	IRN/9/2016	dog	99.2	0	O	ME-SA	PanAsia-2	QOM-15
viba_27681	IRN/15/2016	sheep	99.2	0	O	ME-SA	PanAsia-2	QOM-15
viba_23736	KUW/1/2016	cattle	99.2	0	O	ME-SA	PanAsia-2	QOM-15
viba_23740	KUW/2/2016	cattle	99.2	0	O	ME-SA	PanAsia-2	QOM-15
viba_27685	IRN/16/2016	sheep	99.2	0	O	ME-SA	PanAsia-2	QOM-15
viba_27701	IRN/21/2016	cattle	99.1	0	O	ME-SA	PanAsia-2	QOM-15
viba_27709	IRN/25/2016	cattle	99.1	0	O	ME-SA	PanAsia-2	QOM-15
viba_27693	IRN/18/2016	sheep	99.1	0	O	ME-SA	PanAsia-2	QOM-15

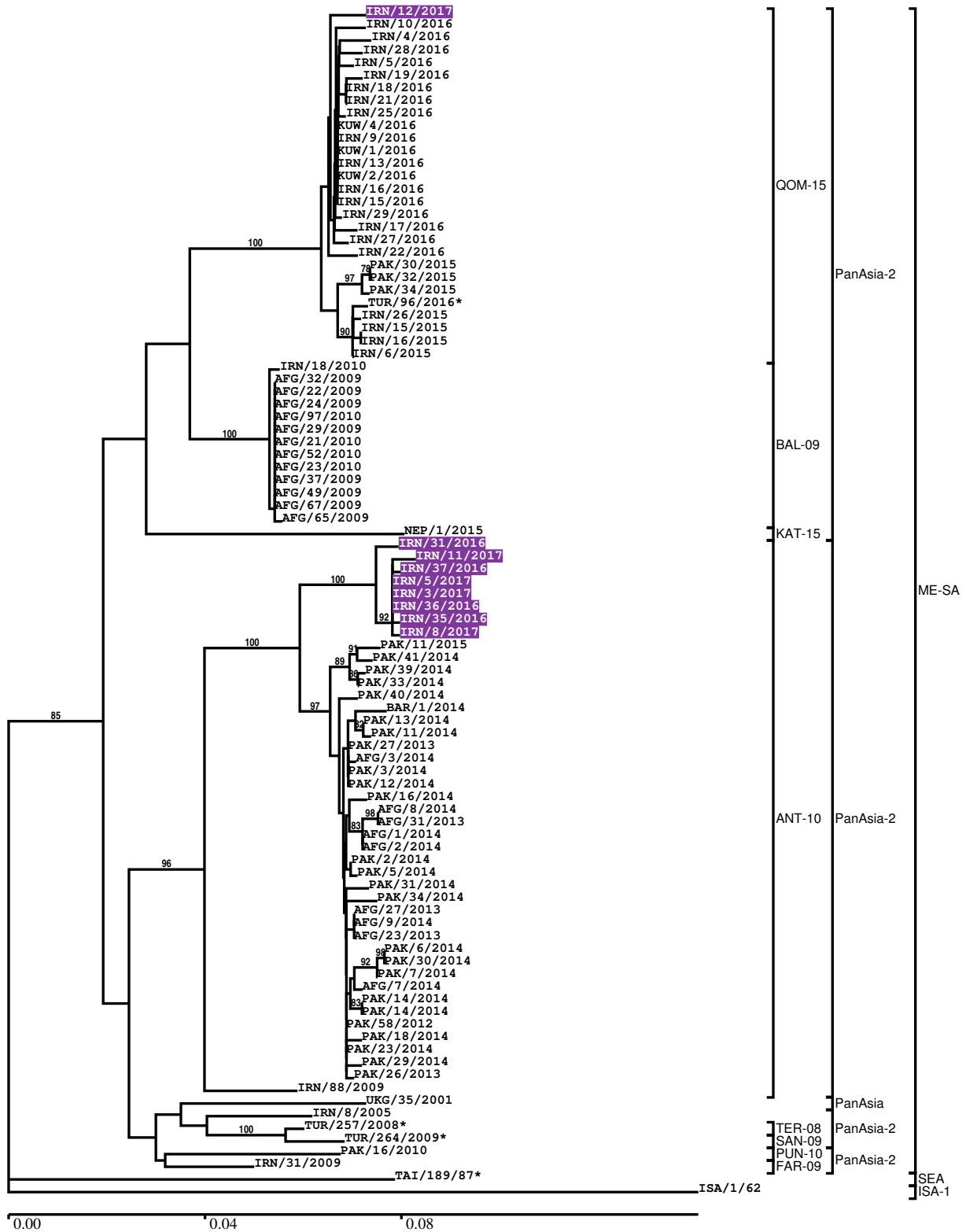
Most Closely Related Prototype Sequences

see http://www.wrlfmd.org/fmd_genotyping/prototypes.htm

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_860	IRN/6/2015	cattle	98.6	0	O	ME-SA	PanAsia-2	QOM-15
viba_666	IRN/18/2010	cattle	94.2	0	O	ME-SA	PanAsia-2	BAL-09
viba_766	IRN/31/2009	cattle	92.7	0	O	ME-SA	PanAsia-2	FAR-09
viba_491	TUR/257/2008		92.1	0	O	ME-SA	PanAsia-2	TER-08
viba_719	IRN/88/2009		92.1	0	O	ME-SA	PanAsia-2	ANT-10
viba_650	IRN/8/2005	ovine	92.1	0	O	ME-SA	PanAsia-2	
viba_850	NEP/1/2015	cattle	91.6	1	O	ME-SA	PanAsia-2	KAT-15
viba_354	PAK/16/2010	cattle	91.0	0	O	ME-SA	PanAsia-2	PUN-10
viba_505	TUR/264/2009		90.8	0	O	ME-SA	PanAsia-2	SAN-09
viba_285	UKG/35/2001	porcine	90.0	0	O	ME-SA	PanAsia	

Report on FMDV O in Iran in 2016, 2017

Batch: WRLFMD/2017/00008



*, not a WRLFMD Reference Number

Analysis Parameters

VP1 subsequence extractor:	vp1_O
Query sequence set:	WRLFMD/2017/00008-Iran-O (9 sequences)
Sequence database set:	allseqs_O (3498 sequences)
Prototype sequence set:	!prototypes_O (47 sequences)
Number of related sequences reported:	10
Minimal VP1 subsequence match length	600
Sequence alignment method:	muscle (default parameters)
Sequence alignment length:	636
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/O

label	accession	host(s)	lab	country	taxonomic information
IRN/12/2017	n/a	cattle	WRLFMD	Iran	ME-SA/PanAsia-2/QOM-15
IRN/10/2016	n/a	sheep	WRLFMD	Iran	ME-SA/PanAsia-2/QOM-15
IRN/4/2016	n/a	n/a	WRLFMD	Iran	ME-SA/PanAsia-2/QOM-15
IRN/28/2016	n/a	sheep	WRLFMD	Iran	ME-SA/PanAsia-2/QOM-15
IRN/5/2016	n/a	n/a	WRLFMD	Iran	ME-SA/PanAsia-2/QOM-15
IRN/19/2016	n/a	sheep	WRLFMD	Iran	ME-SA/PanAsia-2/QOM-15
IRN/18/2016	n/a	sheep	WRLFMD	Iran	ME-SA/PanAsia-2/QOM-15
IRN/21/2016	n/a	cattle	WRLFMD	Iran	ME-SA/PanAsia-2/QOM-15
IRN/25/2016	n/a	cattle	WRLFMD	Iran	ME-SA/PanAsia-2/QOM-15
KUW/4/2016	n/a	cattle	WRLFMD	Kuwait	ME-SA/PanAsia-2/QOM-15
IRN/9/2016	n/a	dog	WRLFMD	Iran	ME-SA/PanAsia-2/QOM-15
KUW/1/2016	n/a	cattle	WRLFMD	Kuwait	ME-SA/PanAsia-2/QOM-15
IRN/13/2016	n/a	cattle	WRLFMD	Iran	ME-SA/PanAsia-2/QOM-15
KUW/2/2016	n/a	cattle	WRLFMD	Kuwait	ME-SA/PanAsia-2/QOM-15
IRN/16/2016	n/a	sheep	WRLFMD	Iran	ME-SA/PanAsia-2/QOM-15
IRN/15/2016	n/a	sheep	WRLFMD	Iran	ME-SA/PanAsia-2/QOM-15
IRN/29/2016	n/a	sheep	WRLFMD	Iran	ME-SA/PanAsia-2/QOM-15
IRN/17/2016	n/a	sheep	WRLFMD	Iran	ME-SA/PanAsia-2/QOM-15
IRN/27/2016	n/a	sheep	WRLFMD	Iran	ME-SA/PanAsia-2/QOM-15
IRN/22/2016	n/a	sheep	WRLFMD	Iran	ME-SA/PanAsia-2/QOM-15
PAK/30/2015	n/a	water buffalo	WRLFMD	Pakistan	ME-SA/PanAsia-2/QOM-15
PAK/32/2015	n/a	cattle	WRLFMD	Pakistan	ME-SA/PanAsia-2/QOM-15
PAK/34/2015	n/a	cattle	WRLFMD	Pakistan	ME-SA/PanAsia-2/QOM-15
TUR/96/2016*	n/a	n/a	FMDI-Ankara	Turkey	ME-SA/PanAsia-2/QOM-15
IRN/26/2015	n/a	sheep	WRLFMD	Iran	ME-SA/PanAsia-2/QOM-15
IRN/15/2015	n/a	cattle	WRLFMD	Iran	ME-SA/PanAsia-2/QOM-15
IRN/16/2015	n/a	cattle	WRLFMD	Iran	ME-SA/PanAsia-2/QOM-15
IRN/6/2015	n/a	cattle	WRLFMD	Iran	ME-SA/PanAsia-2/QOM-15
IRN/18/2010	KY091283	cattle	WRLFMD	Iran	ME-SA/PanAsia-2/BAL-09
AFG/32/2009	n/a	n/a	WRLFMD	Afghanistan	ME-SA/PanAsia-2/BAL-09
AFG/22/2009	n/a	n/a	WRLFMD	Afghanistan	ME-SA/PanAsia-2/BAL-09
AFG/24/2009	n/a	n/a	WRLFMD	Afghanistan	ME-SA/PanAsia-2/BAL-09
AFG/97/2010	n/a	n/a	WRLFMD	Afghanistan	ME-SA/PanAsia-2/BAL-09
AFG/29/2009	n/a	n/a	WRLFMD	Afghanistan	ME-SA/PanAsia-2/BAL-09
AFG/21/2010	n/a	n/a	WRLFMD	Afghanistan	ME-SA/PanAsia-2/BAL-09
AFG/52/2010	n/a	n/a	WRLFMD	Afghanistan	ME-SA/PanAsia-2/BAL-09

continued on next page

label	accession	host(s)	lab	country	taxonomic information
AFG/23/2010	n/a	n/a	WRLFMD	Afghanistan	ME-SA/PanAsia-2/BAL-09
AFG/37/2009	n/a	n/a	WRLFMD	Afghanistan	ME-SA/PanAsia-2/BAL-09
AFG/49/2009	n/a	n/a	WRLFMD	Afghanistan	ME-SA/PanAsia-2/BAL-09
AFG/67/2009	n/a	n/a	WRLFMD	Afghanistan	ME-SA/PanAsia-2/BAL-09
AFG/65/2009	n/a	n/a	WRLFMD	Afghanistan	ME-SA/PanAsia-2/BAL-09
NEP/1/2015	n/a	cattle	WRLFMD	Nepal	ME-SA/PanAsia-2/KAT-15
IRN/31/2016	n/a	cattle	WRLFMD	Iran	ME-SA/PanAsia-2/ANT-10
IRN/11/2017	n/a	cattle	WRLFMD	Iran	ME-SA/PanAsia-2/ANT-10
IRN/37/2016	n/a	cattle	WRLFMD	Iran	ME-SA/PanAsia-2/ANT-10
IRN/5/2017	n/a	cattle	WRLFMD	Iran	ME-SA/PanAsia-2/ANT-10
IRN/3/2017	n/a	sheep	WRLFMD	Iran	ME-SA/PanAsia-2/ANT-10
IRN/36/2016	n/a	sheep	WRLFMD	Iran	ME-SA/PanAsia-2/ANT-10
IRN/35/2016	n/a	cattle	WRLFMD	Iran	ME-SA/PanAsia-2/ANT-10
IRN/8/2017	n/a	cattle	WRLFMD	Iran	ME-SA/PanAsia-2/ANT-10
PAK/11/2015	n/a	cattle	WRLFMD	Pakistan	ME-SA/PanAsia-2/ANT-10
PAK/41/2014	n/a	cattle	WRLFMD	Pakistan	ME-SA/PanAsia-2/ANT-10
PAK/39/2014	n/a	cattle	WRLFMD	Pakistan	ME-SA/PanAsia-2/ANT-10
PAK/33/2014	n/a	cattle	WRLFMD	Pakistan	ME-SA/PanAsia-2/ANT-10
PAK/40/2014	n/a	water buffalo	WRLFMD	Pakistan	ME-SA/PanAsia-2/ANT-10
BAR/1/2014	n/a	cattle	WRLFMD	Bahrain	ME-SA/PanAsia-2/ANT-10
PAK/13/2014	n/a	cattle	WRLFMD	Pakistan	ME-SA/PanAsia-2/ANT-10
PAK/11/2014	n/a	cattle	WRLFMD	Pakistan	ME-SA/PanAsia-2/ANT-10
PAK/27/2013	n/a	water buffalo	WRLFMD	Pakistan	ME-SA/PanAsia-2/ANT-10
AFG/3/2014	n/a	cattle	WRLFMD	Afghanistan	ME-SA/PanAsia-2/ANT-10
PAK/3/2014	n/a	cattle	WRLFMD	Pakistan	ME-SA/PanAsia-2/ANT-10
PAK/12/2014	n/a	cattle	WRLFMD	Pakistan	ME-SA/PanAsia-2/ANT-10
PAK/16/2014	n/a	water buffalo	WRLFMD	Pakistan	ME-SA/PanAsia-2/ANT-10
AFG/8/2014	n/a	cattle	WRLFMD	Afghanistan	ME-SA/PanAsia-2/ANT-10
AFG/31/2013	n/a	cattle	WRLFMD	Afghanistan	ME-SA/PanAsia-2/ANT-10
AFG/1/2014	n/a	cattle	WRLFMD	Afghanistan	ME-SA/PanAsia-2/ANT-10
AFG/2/2014	n/a	cattle	WRLFMD	Afghanistan	ME-SA/PanAsia-2/ANT-10
PAK/2/2014	n/a	water buffalo	WRLFMD	Pakistan	ME-SA/PanAsia-2/ANT-10
PAK/5/2014	n/a	cattle	WRLFMD	Pakistan	ME-SA/PanAsia-2/ANT-10
PAK/31/2014	n/a	water buffalo	WRLFMD	Pakistan	ME-SA/PanAsia-2/ANT-10
PAK/34/2014	n/a	cattle	WRLFMD	Pakistan	ME-SA/PanAsia-2/ANT-10
AFG/27/2013	n/a	cattle	WRLFMD	Afghanistan	ME-SA/PanAsia-2/ANT-10
AFG/9/2014	n/a	cattle	WRLFMD	Afghanistan	ME-SA/PanAsia-2/ANT-10
AFG/23/2013	n/a	cattle	WRLFMD	Afghanistan	ME-SA/PanAsia-2/ANT-10
PAK/6/2014	n/a	cattle	WRLFMD	Pakistan	ME-SA/PanAsia-2/ANT-10
PAK/30/2014	n/a	cattle	WRLFMD	Pakistan	ME-SA/PanAsia-2/ANT-10
PAK/7/2014	n/a	cattle	WRLFMD	Pakistan	ME-SA/PanAsia-2/ANT-10
AFG/7/2014	n/a	cattle	WRLFMD	Afghanistan	ME-SA/PanAsia-2/ANT-10
PAK/14/2014	n/a	cattle	WRLFMD	Pakistan	ME-SA/PanAsia-2/ANT-10
PAK/14/2014	n/a	cattle	WRLFMD	Pakistan	ME-SA/PanAsia-2/ANT-10
PAK/58/2012	n/a	cattle	WRLFMD	Pakistan	ME-SA/PanAsia-2/ANT-10
PAK/18/2014	n/a	water buffalo	WRLFMD	Pakistan	ME-SA/PanAsia-2/ANT-10
PAK/23/2014	n/a	water buffalo	WRLFMD	Pakistan	ME-SA/PanAsia-2/ANT-10
PAK/29/2014	n/a	water buffalo	WRLFMD	Pakistan	ME-SA/PanAsia-2/ANT-10
PAK/26/2013	n/a	cattle	WRLFMD	Pakistan	ME-SA/PanAsia-2/ANT-10
IRN/88/2009	KY091282	n/a	WRLFMD	Iran	ME-SA/PanAsia-2/ANT-10
UKG/35/2001	AJ539141	porcine	PIADC	United Kingdom	ME-SA/PanAsia
IRN/8/2005	KY091281	ovine	WRLFMD	Iran	ME-SA/PanAsia-2
TUR/257/2008*	n/a	n/a	FMDI-Ankara	Turkey	ME-SA/PanAsia-2/TER-08
TUR/264/2009*	n/a	n/a	FMDI-Ankara	Turkey	ME-SA/PanAsia-2/SAN-09
PAK/16/2010	KY091285	cattle	WRLFMD	Pakistan	ME-SA/PanAsia-2/PUN-10
IRN/31/2009	KY091284	cattle	WRLFMD	Iran	ME-SA/PanAsia-2/FAR-09
TAI/189/87*	KY091288	bovine	TRRL	Thailand	SEA
ISA/1/62	AJ303500	n/a	WRLFMD	Indonesia	ISA-1

*, not a WRLFMD Reference Number

n/a, not available