

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

Genotyping Report

FMDV serotype: O
Country: Afghanistan
Year: 2016
Batch: WRLFMD/2016/00029
No. of sequences: 10
Report date: 20th October 2016
Report generated by: Kasia Bankowska
Report checked by: Nick Knowles



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

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Virus sample name:	AFG/4/2016
Sender reference:	5536
Location of origin:	Ghazni, Centre
Country of origin:	Afghanistan
Date of collection:	01/05/2016
Host species:	bovine
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:	17/09/2016
Primers:	O-1C244F/EUR-2B52R; O-1C272F/EUR-2B52R
Received for sequencing:	29/09/2016
Created:	04/10/2016
Last updated:	04/10/2016
VIBASys IDs: sample 30290, genome 30291, sequence viba_30292, sequencing info 30293	

Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_22721	AFG/7/2014	cattle	97.8	0	O	ME-SA	PanAsia-2	ANT-10
viba_23070	PAK/18/2014	water buffalo	97.8	0	O	ME-SA	PanAsia-2	ANT-10
viba_20089	PAK/58/2012	cattle	97.8	0	O	ME-SA	PanAsia-2	ANT-10
viba_22701	AFG/11/2014	cattle	97.8	0	O	ME-SA	PanAsia-2	ANT-10
viba_23030	PAK/5/2014	cattle	97.8	0	O	ME-SA	PanAsia-2	ANT-10
viba_23077	PAK/23/2014	water buffalo	97.8	0	O	ME-SA	PanAsia-2	ANT-10
viba_22705	AFG/2/2014	cattle	97.8	0	O	ME-SA	PanAsia-2	ANT-10
viba_22729	AFG/9/2014	cattle	97.6	0	O	ME-SA	PanAsia-2	ANT-10
viba_21936	PAK/26/2013	cattle	97.6	0	O	ME-SA	PanAsia-2	ANT-10
viba_21539	AFG/27/2013	cattle	97.6	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	92.3	0	O	ME-SA	PanAsia-2	FAR-09
viba_505	TUR/264/2009		91.7	0	O	ME-SA	PanAsia-2	SAN-09
viba_491	TUR/257/2008		91.7	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	91.0	0	O	ME-SA	PanAsia-2	BAL-09
viba_354	PAK/16/2010	cattle	90.8	0	O	ME-SA	PanAsia-2	PUN-10
viba_285	UKG/35/2001	porcine	90.5	0	O	ME-SA	PanAsia	
viba_860	IRN/6/2015	cattle	89.6	0	O	ME-SA	PanAsia-2	QOM-15
viba_705	KUW/3/97	bovine	89.3	0	O	ME-SA	Ind-2001	a

Virus sample name:	AFG/11/2016
Sender reference:	5745
Location of origin:	Badakhshan, North
Country of origin:	Afghanistan
Date of collection:	23/05/2016
Host species:	bovine
Serotype:	O
Topotype:	ME-SA
Lineage:	PanAsia-2
Sublineage:	ANT-10
Sequence length:	633
Ambiguities:	0
Material submitted for sequencing:	BTy2
Harvest date of material:	07/10/2016
Primers:	O-1C244F/EUR-2B52R; O-1C272F/EUR-2B52R
Received for sequencing:	17/10/2016
Created:	19/10/2016
Last updated:	19/10/2016
VIBASys IDs: sample 30294, genome 30295, sequence viba_30296, sequencing info 30297	

Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_30320	AFG/19/2016	bovine	99.8	0	O	ME-SA	PanAsia-2	ANT-10
viba_26191	PAK/42/2015	cattle	99.5	0	O	ME-SA	PanAsia-2	ANT-10
viba_30304	AFG/15/2016	bovine	99.5	0	O	ME-SA	PanAsia-2	ANT-10
viba_30328	AFG/25/2016	bovine	99.2	0	O	ME-SA	PanAsia-2	ANT-10
viba_26195	PAK/44/2015	cattle	98.9	0	O	ME-SA	PanAsia-2	ANT-10
viba_26199	PAK/45/2015	cattle	98.9	0	O	ME-SA	PanAsia-2	ANT-10
viba_26207	PAK/51/2015	water buffalo	98.7	0	O	ME-SA	PanAsia-2	ANT-10
viba_22729	AFG/9/2014	cattle	98.6	0	O	ME-SA	PanAsia-2	ANT-10
viba_21539	AFG/27/2013	cattle	98.6	0	O	ME-SA	PanAsia-2	ANT-10
viba_21536	AFG/23/2013	cattle	98.6	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		94.3	0	O	ME-SA	PanAsia-2	ANT-10
viba_766	IRN/31/2009	cattle	92.7	0	O	ME-SA	PanAsia-2	FAR-09
viba_491	TUR/257/2008		92.4	0	O	ME-SA	PanAsia-2	TER-08
viba_505	TUR/264/2009		91.8	0	O	ME-SA	PanAsia-2	SAN-09
viba_650	IRN/8/2005	ovine	91.6	0	O	ME-SA	PanAsia-2	
viba_285	UKG/35/2001	porcine	91.6	0	O	ME-SA	PanAsia	
viba_666	IRN/18/2010	cattle	91.5	0	O	ME-SA	PanAsia-2	BAL-09
viba_354	PAK/16/2010	cattle	91.2	0	O	ME-SA	PanAsia-2	PUN-10
viba_860	IRN/6/2015	cattle	89.9	0	O	ME-SA	PanAsia-2	QOM-15
viba_541	OMN/7/2001	bovine	89.9	0	O	ME-SA	Ind-2001	b

Virus sample name:	AFG/12/2016
Sender reference:	5612
Location of origin:	Kabul, East
Country of origin:	Afghanistan
Date of collection:	24/05/2016
Host species:	bovine
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:	06/10/2016
Primers:	O-1C244F/EUR-2B52R; O-1C272F/EUR-2B52R
Received for sequencing:	17/10/2016
Created:	19/10/2016
Last updated:	19/10/2016
VIBASys IDs: sample 30298, genome 30299, sequence viba_30300, sequencing info 30301	

Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_30312	AFG/17/2016	bovine	99.8	0	O	ME-SA	PanAsia-2	ANT-10
viba_30316	AFG/18/2016	bovine	99.8	0	O	ME-SA	PanAsia-2	ANT-10
viba_20089	PAK/58/2012	cattle	97.8	0	O	ME-SA	PanAsia-2	ANT-10
viba_23077	PAK/23/2014	water buffalo	97.8	0	O	ME-SA	PanAsia-2	ANT-10
viba_23062	PAK/16/2014	water buffalo	97.8	0	O	ME-SA	PanAsia-2	ANT-10
viba_23089	PAK/29/2014	water buffalo	97.6	0	O	ME-SA	PanAsia-2	ANT-10
viba_22729	AFG/9/2014	cattle	97.6	0	O	ME-SA	PanAsia-2	ANT-10
viba_21936	PAK/26/2013	cattle	97.6	0	O	ME-SA	PanAsia-2	ANT-10
viba_21539	AFG/27/2013	cattle	97.6	0	O	ME-SA	PanAsia-2	ANT-10
viba_23030	PAK/5/2014	cattle	97.6	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		94.8	0	O	ME-SA	PanAsia-2	ANT-10
viba_766	IRN/31/2009	cattle	92.7	0	O	ME-SA	PanAsia-2	FAR-09
viba_666	IRN/18/2010	cattle	91.9	0	O	ME-SA	PanAsia-2	BAL-09
viba_650	IRN/8/2005	ovine	91.8	0	O	ME-SA	PanAsia-2	
viba_491	TUR/257/2008		91.6	0	O	ME-SA	PanAsia-2	TER-08
viba_354	PAK/16/2010	cattle	91.3	0	O	ME-SA	PanAsia-2	PUN-10
viba_505	TUR/264/2009		91.0	0	O	ME-SA	PanAsia-2	SAN-09
viba_285	UKG/35/2001	porcine	90.8	0	O	ME-SA	PanAsia	
viba_860	IRN/6/2015	cattle	89.7	0	O	ME-SA	PanAsia-2	QOM-15
viba_541	OMN/7/2001	bovine	89.4	0	O	ME-SA	Ind-2001	b

Virus sample name:	AFG/15/2016
Sender reference:	5727
Location of origin:	Paktika, East
Country of origin:	Afghanistan
Date of collection:	29/05/2016
Host species:	bovine
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:	06/10/2016
Primers:	O-1C244F/EUR-2B52R; O-1C272F/EUR-2B52R
Received for sequencing:	17/10/2016
Created:	19/10/2016
Last updated:	19/10/2016
VIBASys IDs: sample 30302, genome 30303, sequence viba_30304, sequencing info 30305	

Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_30320	AFG/19/2016	bovine	99.7	0	O	ME-SA	PanAsia-2	ANT-10
viba_30296	AFG/11/2016	bovine	99.5	0	O	ME-SA	PanAsia-2	ANT-10
viba_30328	AFG/25/2016	bovine	99.4	0	O	ME-SA	PanAsia-2	ANT-10
viba_26191	PAK/42/2015	cattle	99.4	0	O	ME-SA	PanAsia-2	ANT-10
viba_26195	PAK/44/2015	cattle	98.7	0	O	ME-SA	PanAsia-2	ANT-10
viba_26199	PAK/45/2015	cattle	98.7	0	O	ME-SA	PanAsia-2	ANT-10
viba_26207	PAK/51/2015	water buffalo	98.6	0	O	ME-SA	PanAsia-2	ANT-10
viba_22729	AFG/9/2014	cattle	98.4	0	O	ME-SA	PanAsia-2	ANT-10
viba_21539	AFG/27/2013	cattle	98.4	0	O	ME-SA	PanAsia-2	ANT-10
viba_21536	AFG/23/2013	cattle	98.4	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	92.3	0	O	ME-SA	PanAsia-2	FAR-09
viba_491	TUR/257/2008		91.9	0	O	ME-SA	PanAsia-2	TER-08
viba_505	TUR/264/2009		91.6	0	O	ME-SA	PanAsia-2	SAN-09
viba_650	IRN/8/2005	ovine	91.2	0	O	ME-SA	PanAsia-2	
viba_285	UKG/35/2001	porcine	91.2	0	O	ME-SA	PanAsia	
viba_354	PAK/16/2010	cattle	91.0	0	O	ME-SA	PanAsia-2	PUN-10
viba_666	IRN/18/2010	cattle	91.0	0	O	ME-SA	PanAsia-2	BAL-09
viba_541	OMN/7/2001	bovine	89.7	0	O	ME-SA	Ind-2001	b
viba_705	KUW/3/97	bovine	89.6	0	O	ME-SA	Ind-2001	a

Virus sample name:	AFG/16/2016
Sender reference:	5715
Location of origin:	Faryab, North
Country of origin:	Afghanistan
Date of collection:	01/06/2016
Host species:	bovine
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:	07/10/2016
Primers:	O-1C244F/EUR-2B52R; O-1C272F/EUR-2B52R
Received for sequencing:	17/10/2016
Created:	19/10/2016
Last updated:	19/10/2016
VIBASys IDs: sample 30306, genome 30307, sequence viba_30308, sequencing info 30309	

Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_30324	AFG/20/2016	bovine	100.0	0	O	ME-SA	PanAsia-2	ANT-10
viba_23050	PAK/12/2014	cattle	98.1	0	O	ME-SA	PanAsia-2	ANT-10
viba_23022	PAK/3/2014	cattle	98.1	0	O	ME-SA	PanAsia-2	ANT-10
viba_21940	PAK/27/2013	water buffalo	98.1	0	O	ME-SA	PanAsia-2	ANT-10
viba_20089	PAK/58/2012	cattle	97.9	0	O	ME-SA	PanAsia-2	ANT-10
viba_22701	AFG/11/2014	cattle	97.9	0	O	ME-SA	PanAsia-2	ANT-10
viba_22709	AFG/3/2014	cattle	97.9	0	O	ME-SA	PanAsia-2	ANT-10
viba_23077	PAK/23/2014	water buffalo	97.9	0	O	ME-SA	PanAsia-2	ANT-10
viba_22705	AFG/2/2014	cattle	97.9	0	O	ME-SA	PanAsia-2	ANT-10
viba_25526	PAK/2/2015	cattle	97.8	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		94.5	0	O	ME-SA	PanAsia-2	ANT-10
viba_766	IRN/31/2009	cattle	92.9	0	O	ME-SA	PanAsia-2	FAR-09
viba_491	TUR/257/2008		91.9	0	O	ME-SA	PanAsia-2	TER-08
viba_650	IRN/8/2005	ovine	91.8	0	O	ME-SA	PanAsia-2	
viba_505	TUR/264/2009		91.6	0	O	ME-SA	PanAsia-2	SAN-09
viba_354	PAK/16/2010	cattle	91.3	0	O	ME-SA	PanAsia-2	PUN-10
viba_666	IRN/18/2010	cattle	91.3	0	O	ME-SA	PanAsia-2	BAL-09
viba_285	UKG/35/2001	porcine	90.8	0	O	ME-SA	PanAsia	
viba_860	IRN/6/2015	cattle	89.7	0	O	ME-SA	PanAsia-2	QOM-15
viba_705	KUW/3/97	bovine	89.7	0	O	ME-SA	Ind-2001	a

Virus sample name:	AFG/17/2016
Sender reference:	5756 -3
Location of origin:	Herat, West
Country of origin:	Afghanistan
Date of collection:	08/06/2016
Host species:	bovine
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:	07/10/2016
Primers:	O-1C244F/EUR-2B52R; O-1C272F/EUR-2B52R
Received for sequencing:	17/10/2016
Created:	19/10/2016
Last updated:	19/10/2016
VIBASys IDs: sample 30310, genome 30311, sequence viba_30312, sequencing info 30313	

Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_30316	AFG/18/2016	bovine	100.0	0	O	ME-SA	PanAsia-2	ANT-10
viba_30300	AFG/12/2016	bovine	99.8	0	O	ME-SA	PanAsia-2	ANT-10
viba_20089	PAK/58/2012	cattle	97.6	0	O	ME-SA	PanAsia-2	ANT-10
viba_23077	PAK/23/2014	water buffalo	97.6	0	O	ME-SA	PanAsia-2	ANT-10
viba_23062	PAK/16/2014	water buffalo	97.6	0	O	ME-SA	PanAsia-2	ANT-10
viba_23089	PAK/29/2014	water buffalo	97.5	0	O	ME-SA	PanAsia-2	ANT-10
viba_22729	AFG/9/2014	cattle	97.5	0	O	ME-SA	PanAsia-2	ANT-10
viba_21936	PAK/26/2013	cattle	97.5	0	O	ME-SA	PanAsia-2	ANT-10
viba_21539	AFG/27/2013	cattle	97.5	0	O	ME-SA	PanAsia-2	ANT-10
viba_23030	PAK/5/2014	cattle	97.5	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		94.6	0	O	ME-SA	PanAsia-2	ANT-10
viba_766	IRN/31/2009	cattle	92.6	0	O	ME-SA	PanAsia-2	FAR-09
viba_666	IRN/18/2010	cattle	91.8	0	O	ME-SA	PanAsia-2	BAL-09
viba_650	IRN/8/2005	ovine	91.6	0	O	ME-SA	PanAsia-2	
viba_354	PAK/16/2010	cattle	91.5	0	O	ME-SA	PanAsia-2	PUN-10
viba_491	TUR/257/2008		91.5	0	O	ME-SA	PanAsia-2	TER-08
viba_505	TUR/264/2009		90.8	0	O	ME-SA	PanAsia-2	SAN-09
viba_285	UKG/35/2001	porcine	90.7	0	O	ME-SA	PanAsia	
viba_860	IRN/6/2015	cattle	89.6	0	O	ME-SA	PanAsia-2	QOM-15
viba_541	OMN/7/2001	bovine	89.3	0	O	ME-SA	Ind-2001	b

Virus sample name:	AFG/18/2016
Sender reference:	5756 -7
Location of origin:	Herat, West
Country of origin:	Afghanistan
Date of collection:	08/06/2016
Host species:	bovine
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:	07/10/2016
Primers:	O-1C244F/EUR-2B52R; O-1C272F/EUR-2B52R
Received for sequencing:	17/10/2016
Created:	19/10/2016
Last updated:	19/10/2016
VIBASys IDs: sample 30314, genome 30315, sequence viba_30316, sequencing info 30317	

Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_30312	AFG/17/2016	bovine	100.0	0	O	ME-SA	PanAsia-2	ANT-10
viba_30300	AFG/12/2016	bovine	99.8	0	O	ME-SA	PanAsia-2	ANT-10
viba_20089	PAK/58/2012	cattle	97.6	0	O	ME-SA	PanAsia-2	ANT-10
viba_23077	PAK/23/2014	water buffalo	97.6	0	O	ME-SA	PanAsia-2	ANT-10
viba_23062	PAK/16/2014	water buffalo	97.6	0	O	ME-SA	PanAsia-2	ANT-10
viba_23089	PAK/29/2014	water buffalo	97.5	0	O	ME-SA	PanAsia-2	ANT-10
viba_22729	AFG/9/2014	cattle	97.5	0	O	ME-SA	PanAsia-2	ANT-10
viba_21936	PAK/26/2013	cattle	97.5	0	O	ME-SA	PanAsia-2	ANT-10
viba_21539	AFG/27/2013	cattle	97.5	0	O	ME-SA	PanAsia-2	ANT-10
viba_23030	PAK/5/2014	cattle	97.5	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		94.6	0	O	ME-SA	PanAsia-2	ANT-10
viba_766	IRN/31/2009	cattle	92.6	0	O	ME-SA	PanAsia-2	FAR-09
viba_666	IRN/18/2010	cattle	91.8	0	O	ME-SA	PanAsia-2	BAL-09
viba_650	IRN/8/2005	ovine	91.6	0	O	ME-SA	PanAsia-2	
viba_354	PAK/16/2010	cattle	91.5	0	O	ME-SA	PanAsia-2	PUN-10
viba_491	TUR/257/2008		91.5	0	O	ME-SA	PanAsia-2	TER-08
viba_505	TUR/264/2009		90.8	0	O	ME-SA	PanAsia-2	SAN-09
viba_285	UKG/35/2001	porcine	90.7	0	O	ME-SA	PanAsia	
viba_860	IRN/6/2015	cattle	89.6	0	O	ME-SA	PanAsia-2	QOM-15
viba_541	OMN/7/2001	bovine	89.3	0	O	ME-SA	Ind-2001	b

Virus sample name:	AFG/19/2016
Sender reference:	5787
Location of origin:	Badakhshan, North
Country of origin:	Afghanistan
Date of collection:	08/06/2016
Host species:	bovine
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:	08/10/2016
Primers:	O-1C244F/EUR-2B52R; O-1C272F/EUR-2B52R
Received for sequencing:	17/10/2016
Created:	19/10/2016
Last updated:	19/10/2016
VIBASys IDs: sample 30318, genome 30319, sequence viba_30320, sequencing info 30321	

Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_30296	AFG/11/2016	bovine	99.8	0	O	ME-SA	PanAsia-2	ANT-10
viba_26191	PAK/42/2015	cattle	99.7	0	O	ME-SA	PanAsia-2	ANT-10
viba_30304	AFG/15/2016	bovine	99.7	0	O	ME-SA	PanAsia-2	ANT-10
viba_30328	AFG/25/2016	bovine	99.4	0	O	ME-SA	PanAsia-2	ANT-10
viba_26195	PAK/44/2015	cattle	99.1	0	O	ME-SA	PanAsia-2	ANT-10
viba_26199	PAK/45/2015	cattle	99.1	0	O	ME-SA	PanAsia-2	ANT-10
viba_26207	PAK/51/2015	water buffalo	98.9	0	O	ME-SA	PanAsia-2	ANT-10
viba_22729	AFG/9/2014	cattle	98.7	0	O	ME-SA	PanAsia-2	ANT-10
viba_21539	AFG/27/2013	cattle	98.7	0	O	ME-SA	PanAsia-2	ANT-10
viba_21536	AFG/23/2013	cattle	98.7	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	92.6	0	O	ME-SA	PanAsia-2	FAR-09
viba_491	TUR/257/2008		92.3	0	O	ME-SA	PanAsia-2	TER-08
viba_505	TUR/264/2009		91.6	0	O	ME-SA	PanAsia-2	SAN-09
viba_650	IRN/8/2005	ovine	91.5	0	O	ME-SA	PanAsia-2	
viba_285	UKG/35/2001	porcine	91.5	0	O	ME-SA	PanAsia	
viba_666	IRN/18/2010	cattle	91.3	0	O	ME-SA	PanAsia-2	BAL-09
viba_354	PAK/16/2010	cattle	91.0	0	O	ME-SA	PanAsia-2	PUN-10
viba_860	IRN/6/2015	cattle	89.7	0	O	ME-SA	PanAsia-2	QOM-15
viba_541	OMN/7/2001	bovine	89.7	0	O	ME-SA	Ind-2001	b

Virus sample name:	AFG/20/2016
Sender reference:	5831
Location of origin:	Jozjan, North-West
Country of origin:	Afghanistan
Date of collection:	11/06/2016
Host species:	bovine
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:	07/10/2016
Primers:	O-1C244F/EUR-2B52R; O-1C272F/EUR-2B52R
Received for sequencing:	17/10/2016
Created:	19/10/2016
Last updated:	19/10/2016
VIBASys IDs: sample 30322, genome 30323, sequence viba_30324, sequencing info 30325	

Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_30308	AFG/16/2016	bovine	100.0	0	O	ME-SA	PanAsia-2	ANT-10
viba_23050	PAK/12/2014	cattle	98.1	0	O	ME-SA	PanAsia-2	ANT-10
viba_23022	PAK/3/2014	cattle	98.1	0	O	ME-SA	PanAsia-2	ANT-10
viba_21940	PAK/27/2013	water buffalo	98.1	0	O	ME-SA	PanAsia-2	ANT-10
viba_20089	PAK/58/2012	cattle	97.9	0	O	ME-SA	PanAsia-2	ANT-10
viba_22701	AFG/11/2014	cattle	97.9	0	O	ME-SA	PanAsia-2	ANT-10
viba_22709	AFG/3/2014	cattle	97.9	0	O	ME-SA	PanAsia-2	ANT-10
viba_23077	PAK/23/2014	water buffalo	97.9	0	O	ME-SA	PanAsia-2	ANT-10
viba_22705	AFG/2/2014	cattle	97.9	0	O	ME-SA	PanAsia-2	ANT-10
viba_25526	PAK/2/2015	cattle	97.8	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		94.5	0	O	ME-SA	PanAsia-2	ANT-10
viba_766	IRN/31/2009	cattle	92.9	0	O	ME-SA	PanAsia-2	FAR-09
viba_491	TUR/257/2008		91.9	0	O	ME-SA	PanAsia-2	TER-08
viba_650	IRN/8/2005	ovine	91.8	0	O	ME-SA	PanAsia-2	
viba_505	TUR/264/2009		91.6	0	O	ME-SA	PanAsia-2	SAN-09
viba_354	PAK/16/2010	cattle	91.3	0	O	ME-SA	PanAsia-2	PUN-10
viba_666	IRN/18/2010	cattle	91.3	0	O	ME-SA	PanAsia-2	BAL-09
viba_285	UKG/35/2001	porcine	90.8	0	O	ME-SA	PanAsia	
viba_860	IRN/6/2015	cattle	89.7	0	O	ME-SA	PanAsia-2	QOM-15
viba_705	KUW/3/97	bovine	89.7	0	O	ME-SA	Ind-2001	a

Virus sample name:	AFG/25/2016
Sender reference:	6151
Location of origin:	Baghlan, North
Country of origin:	Afghanistan
Date of collection:	20/07/2016
Host species:	bovine
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:	08/10/2016
Primers:	O-1C244F/EUR-2B52R; O-1C272F/EUR-2B52R
Received for sequencing:	17/10/2016
Created:	19/10/2016
Last updated:	19/10/2016
VIBASys IDs: sample 30326, genome 30327, sequence viba_30328, sequencing info 30329	

Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_30320	AFG/19/2016	bovine	99.4	0	O	ME-SA	PanAsia-2	ANT-10
viba_30304	AFG/15/2016	bovine	99.4	0	O	ME-SA	PanAsia-2	ANT-10
viba_30296	AFG/11/2016	bovine	99.2	0	O	ME-SA	PanAsia-2	ANT-10
viba_26191	PAK/42/2015	cattle	99.1	0	O	ME-SA	PanAsia-2	ANT-10
viba_26199	PAK/45/2015	cattle	98.7	0	O	ME-SA	PanAsia-2	ANT-10
viba_26195	PAK/44/2015	cattle	98.4	0	O	ME-SA	PanAsia-2	ANT-10
viba_26207	PAK/51/2015	water buffalo	98.3	0	O	ME-SA	PanAsia-2	ANT-10
viba_22729	AFG/9/2014	cattle	98.1	0	O	ME-SA	PanAsia-2	ANT-10
viba_21539	AFG/27/2013	cattle	98.1	0	O	ME-SA	PanAsia-2	ANT-10
viba_21536	AFG/23/2013	cattle	98.1	0	O	ME-SA	PanAsia-2	ANT-10

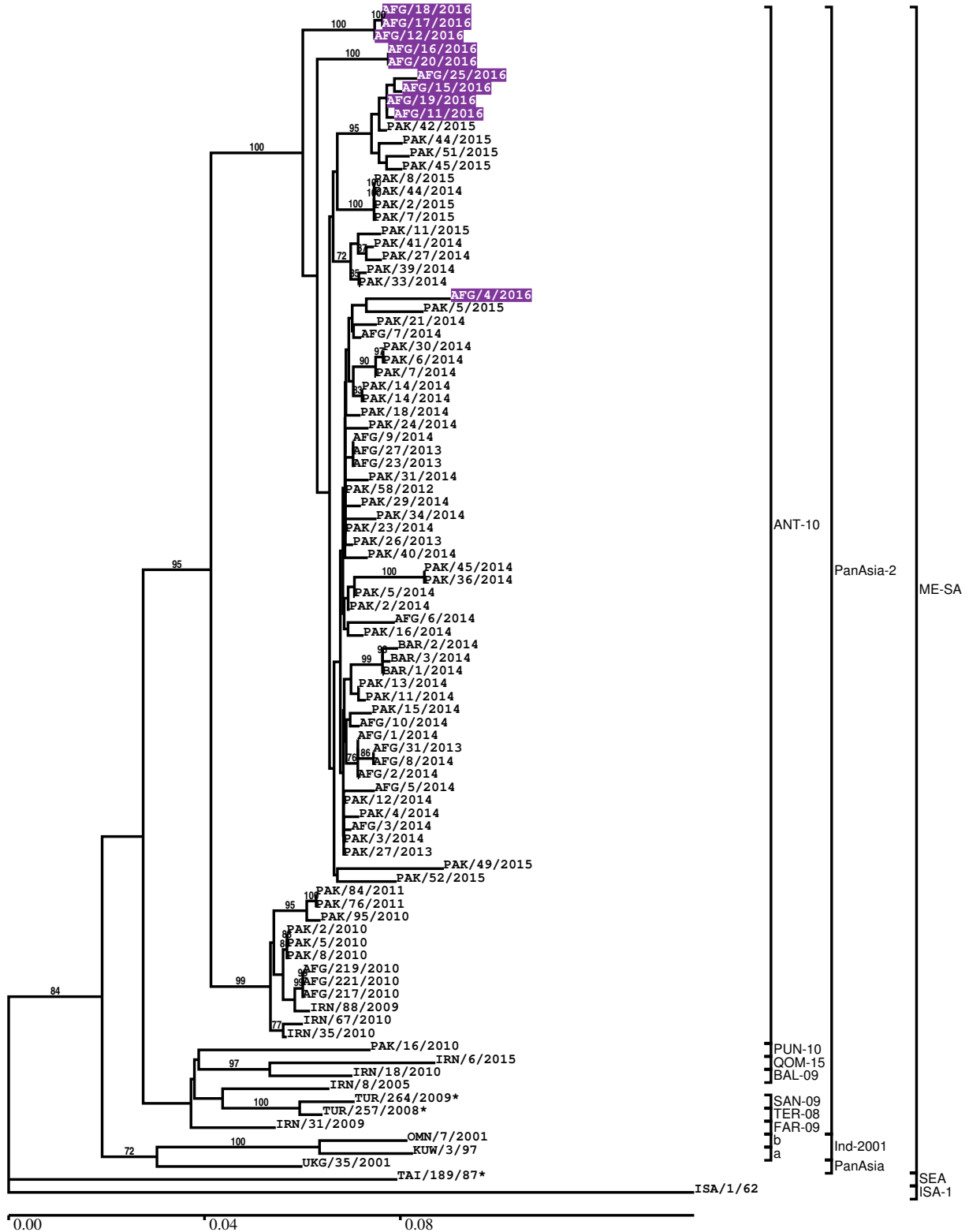
Most Closely Related Prototype Sequences

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	92.3	0	O	ME-SA	PanAsia-2	FAR-09
viba_491	TUR/257/2008		91.9	0	O	ME-SA	PanAsia-2	TER-08
viba_505	TUR/264/2009		91.6	0	O	ME-SA	PanAsia-2	SAN-09
viba_650	IRN/8/2005	ovine	91.2	0	O	ME-SA	PanAsia-2	
viba_285	UKG/35/2001	porcine	91.2	0	O	ME-SA	PanAsia	
viba_354	PAK/16/2010	cattle	91.0	0	O	ME-SA	PanAsia-2	PUN-10
viba_666	IRN/18/2010	cattle	91.0	0	O	ME-SA	PanAsia-2	BAL-09
viba_541	OMN/7/2001	bovine	89.7	0	O	ME-SA	Ind-2001	b
viba_705	KUW/3/97	bovine	89.6	0	O	ME-SA	Ind-2001	a

Report on FMDV O in Afghanistan in 2016

Batch: WRLFMD/2016/00029



*, not a WRLFMD Reference Number

Analysis Parameters

VP1 subsequence extractor: vp1_O
 Query sequence set: WRLFMD/2016/00029-Afghanistan-O (10 sequences)
 Sequence database set: allseqs_O (3141 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: 11
 VIBASys version: reflabs-1.1.0

Sequences in the Phylogenetic Tree

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

label	accession	host(s)	lab	country	taxonomic information
AFG/18/2016	n/a	bovine	WRLFMD	Afghanistan	ME-SA/PanAsia-2/ANT-10
AFG/17/2016	n/a	bovine	WRLFMD	Afghanistan	ME-SA/PanAsia-2/ANT-10
AFG/12/2016	n/a	bovine	WRLFMD	Afghanistan	ME-SA/PanAsia-2/ANT-10
AFG/16/2016	n/a	bovine	WRLFMD	Afghanistan	ME-SA/PanAsia-2/ANT-10
AFG/20/2016	n/a	bovine	WRLFMD	Afghanistan	ME-SA/PanAsia-2/ANT-10
AFG/25/2016	n/a	bovine	WRLFMD	Afghanistan	ME-SA/PanAsia-2/ANT-10
AFG/15/2016	n/a	bovine	WRLFMD	Afghanistan	ME-SA/PanAsia-2/ANT-10
AFG/19/2016	n/a	bovine	WRLFMD	Afghanistan	ME-SA/PanAsia-2/ANT-10
AFG/11/2016	n/a	bovine	WRLFMD	Afghanistan	ME-SA/PanAsia-2/ANT-10
PAK/42/2015	n/a	cattle	WRLFMD	Pakistan	ME-SA/PanAsia-2/ANT-10
PAK/44/2015	n/a	cattle	WRLFMD	Pakistan	ME-SA/PanAsia-2/ANT-10
PAK/51/2015	n/a	water buffalo	WRLFMD	Pakistan	ME-SA/PanAsia-2/ANT-10
PAK/45/2015	n/a	cattle	WRLFMD	Pakistan	ME-SA/PanAsia-2/ANT-10
PAK/8/2015	n/a	cattle	WRLFMD	Pakistan	ME-SA/PanAsia-2/ANT-10
PAK/44/2014	n/a	water buffalo	WRLFMD	Pakistan	ME-SA/PanAsia-2/ANT-10
PAK/2/2015	n/a	cattle	WRLFMD	Pakistan	ME-SA/PanAsia-2/ANT-10
PAK/7/2015	n/a	cattle	WRLFMD	Pakistan	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/27/2014	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
AFG/4/2016	n/a	bovine	WRLFMD	Afghanistan	ME-SA/PanAsia-2/ANT-10
PAK/5/2015	n/a	cattle	WRLFMD	Pakistan	ME-SA/PanAsia-2/ANT-10
PAK/21/2014	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/30/2014	n/a	cattle	WRLFMD	Pakistan	ME-SA/PanAsia-2/ANT-10
PAK/6/2014	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
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/18/2014	n/a	water buffalo	WRLFMD	Pakistan	ME-SA/PanAsia-2/ANT-10
PAK/24/2014	n/a	cattle	WRLFMD	Pakistan	ME-SA/PanAsia-2/ANT-10
AFG/9/2014	n/a	cattle	WRLFMD	Afghanistan	ME-SA/PanAsia-2/ANT-10
AFG/27/2013	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

continued on next page

label	accession	host(s)	lab	country	taxonomic information
PAK/31/2014	n/a	water buffalo	WRLFMD	Pakistan	ME-SA/PanAsia-2/ANT-10
PAK/58/2012	n/a	cattle	WRLFMD	Pakistan	ME-SA/PanAsia-2/ANT-10
PAK/29/2014	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
PAK/23/2014	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
PAK/40/2014	n/a	water buffalo	WRLFMD	Pakistan	ME-SA/PanAsia-2/ANT-10
PAK/45/2014	n/a	cattle	WRLFMD	Pakistan	ME-SA/PanAsia-2/ANT-10
PAK/36/2014	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/2/2014	n/a	water buffalo	WRLFMD	Pakistan	ME-SA/PanAsia-2/ANT-10
AFG/6/2014	n/a	cattle	WRLFMD	Afghanistan	ME-SA/PanAsia-2/ANT-10
PAK/16/2014	n/a	water buffalo	WRLFMD	Pakistan	ME-SA/PanAsia-2/ANT-10
BAR/2/2014	n/a	cattle	WRLFMD	Bahrain	ME-SA/PanAsia-2/ANT-10
BAR/3/2014	n/a	cattle	WRLFMD	Bahrain	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/15/2014	n/a	cattle	WRLFMD	Pakistan	ME-SA/PanAsia-2/ANT-10
AFG/10/2014	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/31/2013	n/a	cattle	WRLFMD	Afghanistan	ME-SA/PanAsia-2/ANT-10
AFG/8/2014	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
AFG/5/2014	n/a	cattle	WRLFMD	Afghanistan	ME-SA/PanAsia-2/ANT-10
PAK/12/2014	n/a	cattle	WRLFMD	Pakistan	ME-SA/PanAsia-2/ANT-10
PAK/4/2014	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/27/2013	n/a	water buffalo	WRLFMD	Pakistan	ME-SA/PanAsia-2/ANT-10
PAK/49/2015	n/a	water buffalo	WRLFMD	Pakistan	ME-SA/PanAsia-2/ANT-10
PAK/52/2015	n/a	cattle	WRLFMD	Pakistan	ME-SA/PanAsia-2/ANT-10
PAK/84/2011	n/a	water buffalo	WRLFMD	Pakistan	ME-SA/PanAsia-2/ANT-10
PAK/76/2011	n/a	cattle	WRLFMD	Pakistan	ME-SA/PanAsia-2/ANT-10
PAK/95/2010	n/a	cattle	WRLFMD	Pakistan	ME-SA/PanAsia-2/ANT-10
PAK/2/2010	n/a	cattle	WRLFMD	Pakistan	ME-SA/PanAsia-2/ANT-10
PAK/5/2010	n/a	cattle	WRLFMD	Pakistan	ME-SA/PanAsia-2/ANT-10
PAK/8/2010	n/a	cattle	WRLFMD	Pakistan	ME-SA/PanAsia-2/ANT-10
AFG/219/2010	n/a	cattle	WRLFMD	Afghanistan	ME-SA/PanAsia-2/ANT-10
AFG/221/2010	n/a	cattle	WRLFMD	Afghanistan	ME-SA/PanAsia-2/ANT-10
AFG/217/2010	n/a	cattle	WRLFMD	Afghanistan	ME-SA/PanAsia-2/ANT-10
IRN/88/2009	n/a	n/a	WRLFMD	Iran	ME-SA/PanAsia-2/ANT-10
IRN/67/2010	n/a	cattle	WRLFMD	Iran	ME-SA/PanAsia-2/ANT-10
IRN/35/2010	n/a	cattle	WRLFMD	Iran	ME-SA/PanAsia-2/ANT-10
PAK/16/2010	n/a	cattle	WRLFMD	Pakistan	ME-SA/PanAsia-2/PUN-10
IRN/6/2015	n/a	cattle	WRLFMD	Iran	ME-SA/PanAsia-2/QOM-15
IRN/18/2010	n/a	cattle	WRLFMD	Iran	ME-SA/PanAsia-2/BAL-09
IRN/8/2005	n/a	ovine	WRLFMD	Iran	ME-SA/PanAsia-2
TUR/264/2009*	n/a	n/a	FMDI-Ankara	Turkey	ME-SA/PanAsia-2/SAN-09
TUR/257/2008*	n/a	n/a	FMDI-Ankara	Turkey	ME-SA/PanAsia-2/TER-08
IRN/31/2009	n/a	cattle	WRLFMD	Iran	ME-SA/PanAsia-2/FAR-09
OMN/7/2001	DQ164941	bovine	WRLFMD	Oman	ME-SA/Ind-2001/b
KUW/3/97	DQ164904	bovine	WRLFMD	Kuwait	ME-SA/Ind-2001/a
UKG/35/2001	AJ539141	porcine	PIADC	United Kingdom	ME-SA/PanAsia
TAI/189/87*	n/a	bovine	TRRL	Thailand	SEA
ISA/1/62	AJ303500	n/a	WRLFMD	Indonesia	ISA-1

*, not a WRLFMD Reference Number

n/a, not available