

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

Genotyping Report

FMDV serotype: O
Country: Turkey
Year: 2019, 2020
Batch: WRLMEG/2020/00026
No. of sequences: 6
Report date: 7th October 2020
Report generated by: Nick Knowles
Report checked by: Antonello Di Nardo

This report is prepared on behalf of the FMD Institute (Ankara, Turkey) and covers VP1 sequences submitted to the WRLFMD on 6 October 2020.



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Virus sample name:	TUR/1/2020.019
Sender reference:	O/Erzurum/1/2020.019
Location of origin:	Erzurum
Country of origin:	Turkey
Date of collection:	31/12/2019
Host species:	cattle
Serotype:	O
Topotype:	ME-SA
Lineage:	PanAsia-2
Sublineage:	QOM-15
Sequence length:	633
Ambiguities:	0
Material submitted for sequencing:	n/a
Harvest date of material:	n/a
Primers:	n/a
Received for sequencing:	n/a
Created:	06/10/2020
Last updated:	06/10/2020
VIBASys IDs: sample 45450, genome 45451, sequence viba_45452, sequencing info 45453	

Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_45456	TUR/78/2020.154	sheep	99.8	0	O	ME-SA	PanAsia-2	QOM-15
viba_41841	TUR/4/2019	cattle	98.1	0	O	ME-SA	PanAsia-2	QOM-15
viba_41837	TUR/3/2019	cattle	98.1	0	O	ME-SA	PanAsia-2	QOM-15
viba_41845	TUR/7/2019	cattle	97.8	0	O	ME-SA	PanAsia-2	QOM-15
viba_41829	TUR/1/2019	cattle	97.6	0	O	ME-SA	PanAsia-2	QOM-15
viba_34055	TUR/276/2017.519		97.0	1	O	ME-SA	PanAsia-2	QOM-15
viba_41785	TUR/7/2017	cattle	96.7	0	O	ME-SA	PanAsia-2	QOM-15
viba_23736	KUW/1/2016	cattle	96.4	0	O	ME-SA	PanAsia-2	QOM-15
viba_27685	IRN/16/2016	sheep	96.4	0	O	ME-SA	PanAsia-2	QOM-15
viba_27677	IRN/13/2016	cattle	96.4	0	O	ME-SA	PanAsia-2	QOM-15

Most Closely Related Prototype Sequences

see <http://www.wrlfmd.org/fmdv-genome/fmd-prototype-strains>

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_860	IRN/6/2015	cattle	96.2	0	O	ME-SA	PanAsia-2	QOM-15
viba_666	IRN/18/2010	cattle	93.7	0	O	ME-SA	PanAsia-2	BAL-09
viba_766	IRN/31/2009	cattle	92.4	0	O	ME-SA	PanAsia-2	FAR-09
viba_650	IRN/8/2005	ovine	91.2	0	O	ME-SA	PanAsia-2	
viba_719	IRN/88/2009		90.8	0	O	ME-SA	PanAsia-2	ANT-10
viba_491	TUR/257/2008		90.7	0	O	ME-SA	PanAsia-2	TER-08
viba_354	PAK/16/2010	cattle	90.7	0	O	ME-SA	PanAsia-2	PUN-10
viba_850	NEP/1/2015	cattle	90.4	1	O	ME-SA	PanAsia-2	KAT-15
viba_285	UKG/35/2001	porcine	89.7	0	O	ME-SA	PanAsia	
viba_505	TUR/264/2009		89.7	0	O	ME-SA	PanAsia-2	SAN-09

Virus sample name:	TUR/78/2020.154
Sender reference:	O/Mus/78/2020.154
Location of origin:	Mus
Country of origin:	Turkey
Date of collection:	21/02/2020
Host species:	sheep
Serotype:	O
Topotype:	ME-SA
Lineage:	PanAsia-2
Sublineage:	QOM-15
Sequence length:	633
Ambiguities:	0
Material submitted for sequencing:	n/a
Harvest date of material:	n/a
Primers:	n/a
Received for sequencing:	n/a
Created:	06/10/2020
Last updated:	06/10/2020
VIBASys IDs: sample 45454, genome 45455, sequence viba_45456, sequencing info 45457	

Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_45452	TUR/1/2020.019	cattle	99.8	0	O	ME-SA	PanAsia-2	QOM-15
viba_41841	TUR/4/2019	cattle	97.9	0	O	ME-SA	PanAsia-2	QOM-15
viba_41837	TUR/3/2019	cattle	97.9	0	O	ME-SA	PanAsia-2	QOM-15
viba_41845	TUR/7/2019	cattle	97.6	0	O	ME-SA	PanAsia-2	QOM-15
viba_41829	TUR/1/2019	cattle	97.5	0	O	ME-SA	PanAsia-2	QOM-15
viba_34055	TUR/276/2017.519		96.8	1	O	ME-SA	PanAsia-2	QOM-15
viba_41785	TUR/7/2017	cattle	96.5	0	O	ME-SA	PanAsia-2	QOM-15
viba_23736	KUW/1/2016	cattle	96.2	0	O	ME-SA	PanAsia-2	QOM-15
viba_27685	IRN/16/2016	sheep	96.2	0	O	ME-SA	PanAsia-2	QOM-15
viba_27677	IRN/13/2016	cattle	96.2	0	O	ME-SA	PanAsia-2	QOM-15

Most Closely Related Prototype Sequences

see <http://www.wrlfmd.org/fmdv-genome/fmd-prototype-strains>

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_860	IRN/6/2015	cattle	96.1	0	O	ME-SA	PanAsia-2	QOM-15
viba_666	IRN/18/2010	cattle	93.5	0	O	ME-SA	PanAsia-2	BAL-09
viba_766	IRN/31/2009	cattle	92.3	0	O	ME-SA	PanAsia-2	FAR-09
viba_650	IRN/8/2005	ovine	91.0	0	O	ME-SA	PanAsia-2	
viba_719	IRN/88/2009		90.7	0	O	ME-SA	PanAsia-2	ANT-10
viba_491	TUR/257/2008		90.5	0	O	ME-SA	PanAsia-2	TER-08
viba_354	PAK/16/2010	cattle	90.5	0	O	ME-SA	PanAsia-2	PUN-10
viba_850	NEP/1/2015	cattle	90.2	1	O	ME-SA	PanAsia-2	KAT-15
viba_285	UKG/35/2001	porcine	89.6	0	O	ME-SA	PanAsia	
viba_505	TUR/264/2009		89.6	0	O	ME-SA	PanAsia-2	SAN-09

Virus sample name:	TUR/156/2020.635
Sender reference:	O/Van/156/2020.635
Location of origin:	Van
Country of origin:	Turkey
Date of collection:	12/08/2020
Host species:	cattle
Serotype:	O
Topotype:	ME-SA
Lineage:	PanAsia-2
Sublineage:	ANT-10
Sequence length:	633
Ambiguities:	0
Material submitted for sequencing:	n/a
Harvest date of material:	n/a
Primers:	n/a
Received for sequencing:	n/a
Created:	06/10/2020
Last updated:	06/10/2020
VIBASys IDs: sample 45458, genome 45459, sequence viba_45460, sequencing info 45461	

Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_45468	TUR/178/2020.75	cattle	97.9	0	O	ME-SA	PanAsia-2	ANT-10
viba_42512	PAK/32/2019	cattle	97.3	0	O	ME-SA	PanAsia-2	ANT-10
viba_39040	NIAB/PUN/PAK/205/2017	water buffalo	96.4	0	O	ME-SA	PanAsia-2	ANT-10
viba_39779	NIAB/PUN/PAK/226/2017		96.4	0	O	ME-SA	PanAsia-2	ANT-10
viba_39743	VRI/CAMB/Faislabad1/PUN/PAK	cattle	96.4	0	O	ME-SA	PanAsia-2	ANT-10
viba_36587	AFG/54/2017	bovine	96.2	0	O	ME-SA	PanAsia-2	ANT-10
viba_33635	IRN/5/2017	cattle	96.2	0	O	ME-SA	PanAsia-2	ANT-10
viba_33631	IRN/3/2017	sheep	96.2	0	O	ME-SA	PanAsia-2	ANT-10
viba_33623	IRN/36/2016	sheep	96.2	0	O	ME-SA	PanAsia-2	ANT-10
viba_39763	NIAB/PUN/PAK/218/2017		96.2	0	O	ME-SA	PanAsia-2	ANT-10

Most Closely Related Prototype Sequences

see <http://www.wrlfmd.org/fmdv-genome/fmd-prototype-strains>

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_719	IRN/88/2009		91.8	0	O	ME-SA	PanAsia-2	ANT-10
viba_766	IRN/31/2009	cattle	89.9	0	O	ME-SA	PanAsia-2	FAR-09
viba_491	TUR/257/2008		89.9	0	O	ME-SA	PanAsia-2	TER-08
viba_354	PAK/16/2010	cattle	89.7	0	O	ME-SA	PanAsia-2	PUN-10
viba_285	UKG/35/2001	porcine	89.6	0	O	ME-SA	PanAsia	
viba_650	IRN/8/2005	ovine	89.3	0	O	ME-SA	PanAsia-2	
viba_505	TUR/264/2009		89.1	0	O	ME-SA	PanAsia-2	SAN-09
viba_666	IRN/18/2010	cattle	89.1	0	O	ME-SA	PanAsia-2	BAL-09
viba_860	IRN/6/2015	cattle	88.8	0	O	ME-SA	PanAsia-2	QOM-15
viba_850	NEP/1/2015	cattle	88.5	1	O	ME-SA	PanAsia-2	KAT-15

Virus sample name:	TUR/170/2020.731
Sender reference:	O/Ardahan/170/2020.731
Location of origin:	Ardahan
Country of origin:	Turkey
Date of collection:	17/09/2020
Host species:	cattle
Serotype:	O
Topotype:	ME-SA
Lineage:	PanAsia-2
Sublineage:	QOM-15
Sequence length:	633
Ambiguities:	0
Material submitted for sequencing:	n/a
Harvest date of material:	n/a
Primers:	n/a
Received for sequencing:	n/a
Created:	06/10/2020
Last updated:	06/10/2020
VIBASys IDs: sample 45462, genome 45463, sequence viba_45464, sequencing info 45465	

Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_45472	TUR/183/2020.75	cattle	99.1	0	O	ME-SA	PanAsia-2	QOM-15
viba_41841	TUR/4/2019	cattle	97.8	0	O	ME-SA	PanAsia-2	QOM-15
viba_41837	TUR/3/2019	cattle	97.5	0	O	ME-SA	PanAsia-2	QOM-15
viba_41845	TUR/7/2019	cattle	97.5	0	O	ME-SA	PanAsia-2	QOM-15
viba_41829	TUR/1/2019	cattle	97.3	0	O	ME-SA	PanAsia-2	QOM-15
viba_34055	TUR/276/2017.519		96.8	1	O	ME-SA	PanAsia-2	QOM-15
viba_41785	TUR/7/2017	cattle	96.4	0	O	ME-SA	PanAsia-2	QOM-15
viba_23736	KUW/1/2016	cattle	96.4	0	O	ME-SA	PanAsia-2	QOM-15
viba_27685	IRN/16/2016	sheep	96.4	0	O	ME-SA	PanAsia-2	QOM-15
viba_27677	IRN/13/2016	cattle	96.4	0	O	ME-SA	PanAsia-2	QOM-15

Most Closely Related Prototype Sequences

see <http://www.wrlfmd.org/fmdv-genome/fmd-prototype-strains>

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_860	IRN/6/2015	cattle	95.9	0	O	ME-SA	PanAsia-2	QOM-15
viba_666	IRN/18/2010	cattle	92.7	0	O	ME-SA	PanAsia-2	BAL-09
viba_766	IRN/31/2009	cattle	91.6	0	O	ME-SA	PanAsia-2	FAR-09
viba_650	IRN/8/2005	ovine	90.8	0	O	ME-SA	PanAsia-2	
viba_491	TUR/257/2008		90.8	0	O	ME-SA	PanAsia-2	TER-08
viba_719	IRN/88/2009		90.7	0	O	ME-SA	PanAsia-2	ANT-10
viba_354	PAK/16/2010	cattle	90.4	0	O	ME-SA	PanAsia-2	PUN-10
viba_505	TUR/264/2009		89.9	0	O	ME-SA	PanAsia-2	SAN-09
viba_285	UKG/35/2001	porcine	89.7	0	O	ME-SA	PanAsia	
viba_850	NEP/1/2015	cattle	89.7	1	O	ME-SA	PanAsia-2	KAT-15

Virus sample name:	TUR/178/2020.75
Sender reference:	O/Tokat/178/2020.750
Location of origin:	Tokat
Country of origin:	Turkey
Date of collection:	22/09/2020
Host species:	cattle
Serotype:	O
Topotype:	ME-SA
Lineage:	PanAsia-2
Sublineage:	ANT-10
Sequence length:	633
Ambiguities:	0
Material submitted for sequencing:	n/a
Harvest date of material:	n/a
Primers:	n/a
Received for sequencing:	n/a
Created:	06/10/2020
Last updated:	06/10/2020
VIBASys IDs: sample 45466, genome 45467, sequence viba_45468, sequencing info 45469	

Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_45460	TUR/156/2020.635	cattle	97.9	0	O	ME-SA	PanAsia-2	ANT-10
viba_42512	PAK/32/2019	cattle	97.2	0	O	ME-SA	PanAsia-2	ANT-10
viba_39040	NIAB/PUN/PAK/205/2017	water buffalo	96.2	0	O	ME-SA	PanAsia-2	ANT-10
viba_39775	NIAB/PUN/PAK/223/2017		96.2	0	O	ME-SA	PanAsia-2	ANT-10
viba_39743	VRI/CAMB/Faislabad1/PUN/PAK	cattle	96.2	0	O	ME-SA	PanAsia-2	ANT-10
viba_39771	NIAB/PUN/PAK/222/2017		96.2	0	O	ME-SA	PanAsia-2	ANT-10
viba_36587	AFG/54/2017	bovine	96.1	0	O	ME-SA	PanAsia-2	ANT-10
viba_34280	AFG/35/2017	cattle	96.1	0	O	ME-SA	PanAsia-2	ANT-10
viba_33635	IRN/5/2017	cattle	96.1	0	O	ME-SA	PanAsia-2	ANT-10
viba_33631	IRN/3/2017	sheep	96.1	0	O	ME-SA	PanAsia-2	ANT-10

Most Closely Related Prototype Sequences

see <http://www.wrlfmd.org/fmdv-genome/fmd-prototype-strains>

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_719	IRN/88/2009		91.3	0	O	ME-SA	PanAsia-2	ANT-10
viba_766	IRN/31/2009	cattle	89.7	0	O	ME-SA	PanAsia-2	FAR-09
viba_491	TUR/257/2008		89.3	0	O	ME-SA	PanAsia-2	TER-08
viba_650	IRN/8/2005	ovine	89.1	0	O	ME-SA	PanAsia-2	
viba_354	PAK/16/2010	cattle	88.8	0	O	ME-SA	PanAsia-2	PUN-10
viba_505	TUR/264/2009		88.6	0	O	ME-SA	PanAsia-2	SAN-09
viba_666	IRN/18/2010	cattle	88.6	0	O	ME-SA	PanAsia-2	BAL-09
viba_850	NEP/1/2015	cattle	88.6	1	O	ME-SA	PanAsia-2	KAT-15
viba_285	UKG/35/2001	porcine	88.5	0	O	ME-SA	PanAsia	
viba_860	IRN/6/2015	cattle	88.0	0	O	ME-SA	PanAsia-2	QOM-15

Virus sample name:	TUR/183/2020.75
Sender reference:	O/Kars/183/2020.750
Location of origin:	Kars
Country of origin:	Turkey
Date of collection:	25/09/2020
Host species:	cattle
Serotype:	O
Topotype:	ME-SA
Lineage:	PanAsia-2
Sublineage:	QOM-15
Sequence length:	633
Ambiguities:	0
Material submitted for sequencing:	n/a
Harvest date of material:	n/a
Primers:	n/a
Received for sequencing:	n/a
Created:	06/10/2020
Last updated:	06/10/2020
VIBASys IDs: sample 45470, genome 45471, sequence viba_45472, sequencing info 45473	

Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_45464	TUR/170/2020.731	cattle	99.1	0	O	ME-SA	PanAsia-2	QOM-15
viba_41841	TUR/4/2019	cattle	97.8	0	O	ME-SA	PanAsia-2	QOM-15
viba_41837	TUR/3/2019	cattle	97.5	0	O	ME-SA	PanAsia-2	QOM-15
viba_41845	TUR/7/2019	cattle	97.5	0	O	ME-SA	PanAsia-2	QOM-15
viba_41829	TUR/1/2019	cattle	97.3	0	O	ME-SA	PanAsia-2	QOM-15
viba_34055	TUR/276/2017.519		96.8	1	O	ME-SA	PanAsia-2	QOM-15
viba_41785	TUR/7/2017	cattle	96.4	0	O	ME-SA	PanAsia-2	QOM-15
viba_23736	KUW/1/2016	cattle	96.4	0	O	ME-SA	PanAsia-2	QOM-15
viba_27685	IRN/16/2016	sheep	96.4	0	O	ME-SA	PanAsia-2	QOM-15
viba_27677	IRN/13/2016	cattle	96.4	0	O	ME-SA	PanAsia-2	QOM-15

Most Closely Related Prototype Sequences

see <http://www.wrlfmd.org/fmdv-genome/fmd-prototype-strains>

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_860	IRN/6/2015	cattle	95.9	0	O	ME-SA	PanAsia-2	QOM-15
viba_666	IRN/18/2010	cattle	93.0	0	O	ME-SA	PanAsia-2	BAL-09
viba_766	IRN/31/2009	cattle	91.8	0	O	ME-SA	PanAsia-2	FAR-09
viba_491	TUR/257/2008		91.3	0	O	ME-SA	PanAsia-2	TER-08
viba_650	IRN/8/2005	ovine	91.0	0	O	ME-SA	PanAsia-2	
viba_719	IRN/88/2009		90.5	0	O	ME-SA	PanAsia-2	ANT-10
viba_505	TUR/264/2009		90.4	0	O	ME-SA	PanAsia-2	SAN-09
viba_285	UKG/35/2001	porcine	89.9	0	O	ME-SA	PanAsia	
viba_354	PAK/16/2010	cattle	89.9	0	O	ME-SA	PanAsia-2	PUN-10
viba_850	NEP/1/2015	cattle	89.6	1	O	ME-SA	PanAsia-2	KAT-15

Report on FMDV O in Turkey in 2019, 2020

Batch: WRLMEG/2020/00026



*, not a WRLFMD Reference Number

Analysis Parameters

VP1 subsequence extractor:	vp1_O
Query sequence set:	WRLMEG/2020/00026-Turkey-O (6 sequences)
Sequence database set:	allseqs_O (4812 sequences)
Prototype sequence set:	!prototypes_O (49 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:	reflabs-1.1.2

Sequences in the Phylogenetic Tree

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

label	accession	host(s)	lab	country	taxonomic information
TUR/156/2020.635*	n/a	cattle	FMDI	Turkey	ME-SA/PanAsia-2/ANT-10
TUR/178/2020.75*	n/a	cattle	FMDI	Turkey	ME-SA/PanAsia-2/ANT-10
PAK/32/2019	n/a	cattle	WRLFMD	Pakistan	ME-SA/PanAsia-2/ANT-10
PAK/3/2020	n/a	cattle	WRLFMD	Pakistan	ME-SA/PanAsia-2/ANT-10
PAK/74/2019	n/a	water buffalo	WRLFMD	Pakistan	ME-SA/PanAsia-2/ANT-10
PAK/16/2019	n/a	cattle	WRLFMD	Pakistan	ME-SA/PanAsia-2/ANT-10
PAK/47/2019	n/a	cattle	WRLFMD	Pakistan	ME-SA/PanAsia-2/ANT-10
AFG/23/2017	n/a	cattle	WRLFMD	Afghanistan	ME-SA/PanAsia-2/ANT-10
VRI/CAMB/Lodrah1/PUN/PAK/2017*	MK342179	cattle	VRI-CAMB	Pakistan	ME-SA/PanAsia-2/ANT-10
IRN/1/2018	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
AFG/54/2017	n/a	bovine	WRLFMD	Afghanistan	ME-SA/PanAsia-2/ANT-10
NIAB/PUN/PAK/226/2017*	MH085208	n/a	NIAB	Pakistan	ME-SA/PanAsia-2/ANT-10

continued on next page

label	accession	host(s)	lab	country	taxonomic information
NIAB/PUN/PAK/220/2017*	MH085205	n/a	NIAB	Pakistan	ME-SA/PanAsia-2/ANT-10
VRI/CAMB/Sahiwal1/PUN/PAK*	MK292143	cattle	VRI-CAMB	Pakistan	ME-SA/PanAsia-2/ANT-10
NIAB/PUN/PAK/218/2017*	MH085204	n/a	NIAB	Pakistan	ME-SA/PanAsia-2/ANT-10
VRI/CAMB/Faisalabad1/PUN/PAK*	MK292142	cattle	VRI-CAMB	Pakistan	ME-SA/PanAsia-2/ANT-10
NIAB/PUN/PAK/205/2017*	MF140436	water buffalo	NIAB	Pakistan	ME-SA/PanAsia-2/ANT-10
AFG/44/2017	n/a	bovine	WRLFMD	Afghanistan	ME-SA/PanAsia-2/ANT-10
PAK/18/2017	n/a	cattle	WRLFMD	Pakistan	ME-SA/PanAsia-2/ANT-10
IRN/31/2016	n/a	cattle	WRLFMD	Iran	ME-SA/PanAsia-2/ANT-10
PAK/7/2016	n/a	cattle	WRLFMD	Pakistan	ME-SA/PanAsia-2/ANT-10
AFG/35/2017	n/a	cattle	WRLFMD	Afghanistan	ME-SA/PanAsia-2/ANT-10
NIAB/PUN/PAK/223/2017*	MH085207	n/a	NIAB	Pakistan	ME-SA/PanAsia-2/ANT-10
NIAB/PUN/PAK/222/2017*	MH085206	n/a	NIAB	Pakistan	ME-SA/PanAsia-2/ANT-10
VRI/CAMB/Bhakar3/PUN/PAK/2018*	MK342186	cattle	VRI-CAMB	Pakistan	ME-SA/PanAsia-2/ANT-10
TUR/448/2017*	n/a	sheep	FMDI	Turkey	ME-SA/PanAsia-2/ANT-10
VRI/CAMB/Gujrat/PUN/PAK/2017*	MK342182	cattle	VRI-CAMB	Pakistan	ME-SA/PanAsia-2/ANT-10
VRI/CAMB/Gujrat2/PUN/PAK/2017*	MK342183	cattle	VRI-CAMB	Pakistan	ME-SA/PanAsia-2/ANT-10
AFG/16/2017	n/a	cattle	WRLFMD	Afghanistan	ME-SA/PanAsia-2/ANT-10
PAK/8/2019	n/a	cattle	WRLFMD	Pakistan	ME-SA/PanAsia-2/ANT-10
AFG/52/2017	n/a	bovine	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
NIAB/PUN/PAK/18/2014*	MF374991	cattle	NIAB	Pakistan	ME-SA/PanAsia-2/ANT-10
NIAB/SIN/PAK/46/2014*	MF374989	cattle	NIAB	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/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
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
TUR/170/2020.731*	n/a	cattle	FMDI	Turkey	ME-SA/PanAsia-2/QOM-15
TUR/183/2020.75*	n/a	cattle	FMDI	Turkey	ME-SA/PanAsia-2/QOM-15
TUR/78/2020.154*	n/a	sheep	FMDI	Turkey	ME-SA/PanAsia-2/QOM-15
TUR/1/2020.019*	n/a	cattle	FMDI	Turkey	ME-SA/PanAsia-2/QOM-15
TUR/1/2019	n/a	cattle	WRLFMD	Turkey	ME-SA/PanAsia-2/QOM-15

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label	accession	host(s)	lab	country	taxonomic information
TUR/4/2019	n/a	cattle	WRLFMD	Turkey	ME-SA/PanAsia-2/QOM-15
TUR/7/2019	n/a	cattle	WRLFMD	Turkey	ME-SA/PanAsia-2/QOM-15
TUR/3/2019	n/a	cattle	WRLFMD	Turkey	ME-SA/PanAsia-2/QOM-15
TUR/276/2017.519*	n/a	n/a	FMDI	Turkey	ME-SA/PanAsia-2/QOM-15
TUR/7/2017	n/a	cattle	WRLFMD	Turkey	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/16/2015	n/a	cattle	WRLFMD	Iran	ME-SA/PanAsia-2/QOM-15
IRN/15/2015	n/a	cattle	WRLFMD	Iran	ME-SA/PanAsia-2/QOM-15
IRN/6/2015	MN276044	cattle	WRLFMD	Iran	ME-SA/PanAsia-2/QOM-15
TUR/4/2017	n/a	cattle	WRLFMD	Turkey	ME-SA/PanAsia-2/QOM-15
TUR/2/2016	n/a	cattle	WRLFMD	Turkey	ME-SA/PanAsia-2/QOM-15
TUR/5/2017	n/a	cattle	WRLFMD	Turkey	ME-SA/PanAsia-2/QOM-15
IRN/17/2016	n/a	sheep	WRLFMD	Iran	ME-SA/PanAsia-2/QOM-15
IRN/15/2018	n/a	sheep	WRLFMD	Iran	ME-SA/PanAsia-2/QOM-15
IRN/24/2018	n/a	cattle	WRLFMD	Iran	ME-SA/PanAsia-2/QOM-15
IRN/20/2018	n/a	sheep	WRLFMD	Iran	ME-SA/PanAsia-2/QOM-15
IRN/11/2018	n/a	cattle	WRLFMD	Iran	ME-SA/PanAsia-2/QOM-15
IRN/16/2018	n/a	cattle	WRLFMD	Iran	ME-SA/PanAsia-2/QOM-15
IRN/22/2018	n/a	cattle	WRLFMD	Iran	ME-SA/PanAsia-2/QOM-15
IRN/13/2018	n/a	cattle	WRLFMD	Iran	ME-SA/PanAsia-2/QOM-15
IRN/8/2018	n/a	sheep	WRLFMD	Iran	ME-SA/PanAsia-2/QOM-15
TUR/435/2018*	n/a	n/a	FMDI	Turkey	ME-SA/PanAsia-2/QOM-15
IRN/29/2016	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/15/2016	n/a	sheep	WRLFMD	Iran	ME-SA/PanAsia-2/QOM-15
KUW/4/2016	n/a	cattle	WRLFMD	Kuwait	ME-SA/PanAsia-2/QOM-15
IRN/19/2016	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/18/2016	n/a	sheep	WRLFMD	Iran	ME-SA/PanAsia-2/QOM-15
IRN/16/2016	n/a	sheep	WRLFMD	Iran	ME-SA/PanAsia-2/QOM-15
IRN/28/2016	n/a	sheep	WRLFMD	Iran	ME-SA/PanAsia-2/QOM-15
IRN/13/2016	n/a	cattle	WRLFMD	Iran	ME-SA/PanAsia-2/QOM-15
IRN/9/2016	n/a	dog	WRLFMD	Iran	ME-SA/PanAsia-2/QOM-15
IRN/5/2016	n/a	n/a	WRLFMD	Iran	ME-SA/PanAsia-2/QOM-15

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label	accession	host(s)	lab	country	taxonomic information
KUW/2/2016	n/a	cattle	WRLFMD	Kuwait	ME-SA/PanAsia-2/QOM-15
KUW/1/2016	n/a	cattle	WRLFMD	Kuwait	ME-SA/PanAsia-2/QOM-15
IRN/25/2016	n/a	cattle	WRLFMD	Iran	ME-SA/PanAsia-2/QOM-15
IRN/18/2010	KY091283	cattle	WRLFMD	Iran	ME-SA/PanAsia-2/BAL-09
NEP/1/2015	MN276045	cattle	WRLFMD	Nepal	ME-SA/PanAsia-2/KAT-15
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