

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

Genotyping Report

FMDV serotype: O
Country: Turkiye
Year: 2023
Batch: WRLFMD/2023/000074
No. of sequences: 3
Report date: 10th October 2023
Report generated by: Nick Knowles
Report checked by: Jemma Wadsworth



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

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Virus sample name:	TUR/1/2023
Sender reference:	3
Location of origin:	Muslumabat, Zara, Sivas
Country of origin:	Turkiye
Date of collection:	02/01/2023
Host species:	cattle
Serotype:	O
Topotype:	ME-SA
Lineage:	PanAsia-2
Sublineage:	QOM-15
Sequence length:	633
Ambiguities:	0
Material submitted for sequencing:	WRL-LFBK1
Harvest date of material:	26/09/2023
Primers:	O-1C244F & O-1C272F/EUR-2B52R; FMD-3161F/FMD-4303R
Received for sequencing:	05/10/2023
Created:	10/10/2023
Last updated:	10/10/2023

VIBASys IDs: sample 54395, genome 54396, sequence viba_54397, sequencing info 54398

Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_52099	TUR/122/2022.712	sheep	99.7	0	O	ME-SA	PanAsia-2	QOM-15
viba_52069	TUR/95/2022.635	cattle	99.7	0	O	ME-SA	PanAsia-2	QOM-15
viba_52073	TUR/96/2022.635	cattle	99.7	0	O	ME-SA	PanAsia-2	QOM-15
viba_52128	TUR/140/2022.769	sheep	99.7	0	O	ME-SA	PanAsia-2	QOM-15
viba_52095	TUR/121/2022.692	sheep	99.7	0	O	ME-SA	PanAsia-2	QOM-15
viba_52119	TUR/135/2022.75	sheep	99.5	0	O	ME-SA	PanAsia-2	QOM-15
viba_52107	TUR/128/2022.712	sheep	99.5	0	O	ME-SA	PanAsia-2	QOM-15
viba_52103	TUR/124/2022.712	sheep	99.5	0	O	ME-SA	PanAsia-2	QOM-15
viba_52123	TUR/136/2022.75	sheep	99.4	0	O	ME-SA	PanAsia-2	QOM-15
viba_54405	TUR/3/2023	cattle	99.4	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	94.8	0	O	ME-SA	PanAsia-2	QOM-15
viba_666	IRN/18/2010	cattle	91.6	0	O	ME-SA	PanAsia-2	BAL-09
viba_766	IRN/31/2009	cattle	90.8	0	O	ME-SA	PanAsia-2	FAR-09
viba_719	IRN/88/2009		90.2	0	O	ME-SA	PanAsia-2	ANT-10
viba_491	TUR/257/2008		90.0	0	O	ME-SA	PanAsia-2	TER-08
viba_505	TUR/264/2009		90.0	0	O	ME-SA	PanAsia-2	SAN-09
viba_650	IRN/8/2005	ovine	89.9	0	O	ME-SA	PanAsia-2	
viba_354	PAK/16/2010	cattle	89.9	0	O	ME-SA	PanAsia-2	PUN-10
viba_27877	SRL/2/97	bovine	89.4	0	O	ME-SA	Srl-97	
viba_850	NEP/1/2015	cattle	89.3	1	O	ME-SA	PanAsia-2	KAT-15

Virus sample name:	TUR/2/2023
Sender reference:	13
Location of origin:	Yenikoy, Oguzeli, Gaziantep
Country of origin:	Turkiye
Date of collection:	17/01/2023
Host species:	sheep
Serotype:	O
Topotype:	ME-SA
Lineage:	PanAsia-2
Sublineage:	ANT-10
Sequence length:	633
Ambiguities:	0
Material submitted for sequencing:	WRL-LFBK1
Harvest date of material:	26/09/2023
Primers:	O-1C244F & O-1C272F/EUR-2B52R; FMD-3161F/FMD-4303R
Received for sequencing:	05/10/2023
Created:	10/10/2023
Last updated:	10/10/2023

VIBASys IDs: sample 54399, genome 54400, sequence viba_54401, sequencing info 54402

Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_52132	TUR/143/2022.769	sheep	99.4	0	O	ME-SA	PanAsia-2	ANT-10
viba_52077	TUR/99/2022.635	cattle	99.4	0	O	ME-SA	PanAsia-2	ANT-10
viba_52087	TUR/106/2022.654	sheep	99.4	0	O	ME-SA	PanAsia-2	ANT-10
viba_52140	TUR/149/2022.769	sheep	99.2	0	O	ME-SA	PanAsia-2	ANT-10
viba_52082	TUR/101/2022.635	sheep	99.1	0	O	ME-SA	PanAsia-2	ANT-10
viba_54335	Otarod_8195/IRN/2020	cattle	99.1	0	O	ME-SA	PanAsia-2	ANT-10
viba_52234	OMN/22Z1990/2020_9	cattle	98.6	0	O	ME-SA	PanAsia-2	ANT-10
viba_52242	OMN/22Z1992/2020_11	cattle	98.6	0	O	ME-SA	PanAsia-2	ANT-10
viba_52206	OMN/22Z2043/2020_80	cattle	98.6	0	O	ME-SA	PanAsia-2	ANT-10
viba_52214	OMN/22Z2045/2020_82	cattle	98.6	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		92.0	0	O	ME-SA	PanAsia-2	ANT-10
viba_491	TUR/257/2008		90.2	0	O	ME-SA	PanAsia-2	TER-08
viba_766	IRN/31/2009	cattle	90.2	0	O	ME-SA	PanAsia-2	FAR-09
viba_354	PAK/16/2010	cattle	89.7	0	O	ME-SA	PanAsia-2	PUN-10
viba_505	TUR/264/2009		89.6	0	O	ME-SA	PanAsia-2	SAN-09
viba_666	IRN/18/2010	cattle	89.6	0	O	ME-SA	PanAsia-2	BAL-09
viba_650	IRN/8/2005	ovine	89.4	0	O	ME-SA	PanAsia-2	
viba_285	UKG/35/2001	porcine	88.8	0	O	ME-SA	PanAsia	
viba_27877	SRL/2/97	bovine	88.5	0	O	ME-SA	Srl-97	
viba_860	IRN/6/2015	cattle	88.5	0	O	ME-SA	PanAsia-2	QOM-15

Virus sample name:	TUR/3/2023
Sender reference:	79
Location of origin:	Sagimahalle, Tuzluca, Iğdir
Country of origin:	Turkiye
Date of collection:	03/03/2023
Host species:	cattle
Serotype:	O
Topotype:	ME-SA
Lineage:	PanAsia-2
Sublineage:	QOM-15
Sequence length:	633
Ambiguities:	0
Material submitted for sequencing:	WRL-LFBK1
Harvest date of material:	26/09/2023
Primers:	O-1C244F & O-1C272F/EUR-2B52R; FMD-3161F/FMD-4303R
Received for sequencing:	05/10/2023
Created:	10/10/2023
Last updated:	10/10/2023

VIBASys IDs: sample 54403, genome 54404, sequence viba_54405, sequencing info 54406

Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_52099	TUR/122/2022.712	sheep	99.7	0	O	ME-SA	PanAsia-2	QOM-15
viba_52069	TUR/95/2022.635	cattle	99.7	0	O	ME-SA	PanAsia-2	QOM-15
viba_52073	TUR/96/2022.635	cattle	99.7	0	O	ME-SA	PanAsia-2	QOM-15
viba_52128	TUR/140/2022.769	sheep	99.7	0	O	ME-SA	PanAsia-2	QOM-15
viba_52095	TUR/121/2022.692	sheep	99.7	0	O	ME-SA	PanAsia-2	QOM-15
viba_52119	TUR/135/2022.75	sheep	99.5	0	O	ME-SA	PanAsia-2	QOM-15
viba_52107	TUR/128/2022.712	sheep	99.5	0	O	ME-SA	PanAsia-2	QOM-15
viba_52103	TUR/124/2022.712	sheep	99.5	0	O	ME-SA	PanAsia-2	QOM-15
viba_52123	TUR/136/2022.75	sheep	99.4	0	O	ME-SA	PanAsia-2	QOM-15
viba_54397	TUR/1/2023	cattle	99.4	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	94.5	0	O	ME-SA	PanAsia-2	QOM-15
viba_666	IRN/18/2010	cattle	91.3	0	O	ME-SA	PanAsia-2	BAL-09
viba_766	IRN/31/2009	cattle	90.5	0	O	ME-SA	PanAsia-2	FAR-09
viba_719	IRN/88/2009		89.9	0	O	ME-SA	PanAsia-2	ANT-10
viba_491	TUR/257/2008		89.7	0	O	ME-SA	PanAsia-2	TER-08
viba_650	IRN/8/2005	ovine	89.6	0	O	ME-SA	PanAsia-2	
viba_505	TUR/264/2009		89.4	0	O	ME-SA	PanAsia-2	SAN-09
viba_354	PAK/16/2010	cattle	89.3	0	O	ME-SA	PanAsia-2	PUN-10
viba_27877	SRL/2/97	bovine	89.1	0	O	ME-SA	Srl-97	
viba_850	NEP/1/2015	cattle	88.6	1	O	ME-SA	PanAsia-2	KAT-15

Report on FMDV O in Turkiye in 2023

Batch: WRLFMD/2023/000074



*, not a WRLFMD Reference Number

Analysis Parameters

VP1 subsequence extractor:	vp1_O
Query sequence set:	WRLFMD/2023/000074-Turkiye-O (3 sequences)
Sequence database set:	allseqs_O (6153 sequences)
Prototype sequence set:	!prototypes_O (58 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-1.1.2

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/3/2023	n/a	cattle	WRLFMD	Turkiye	ME-SA/PanAsia-2/QOM-15
TUR/128/2022.712*	n/a	sheep	FMDI	Turkiye	ME-SA/PanAsia-2/QOM-15
TUR/150/2022.788*	n/a	sheep	FMDI	Turkiye	ME-SA/PanAsia-2/QOM-15
TUR/124/2022.712*	n/a	sheep	FMDI	Turkiye	ME-SA/PanAsia-2/QOM-15
TUR/96/2022.635*	n/a	cattle	FMDI	Turkiye	ME-SA/PanAsia-2/QOM-15
TUR/140/2022.769*	n/a	sheep	FMDI	Turkiye	ME-SA/PanAsia-2/QOM-15
TUR/121/2022.692*	n/a	sheep	FMDI	Turkiye	ME-SA/PanAsia-2/QOM-15
TUR/122/2022.712*	n/a	sheep	FMDI	Turkiye	ME-SA/PanAsia-2/QOM-15
TUR/95/2022.635*	n/a	cattle	FMDI	Turkiye	ME-SA/PanAsia-2/QOM-15
TUR/136/2022.75*	n/a	sheep	FMDI	Turkiye	ME-SA/PanAsia-2/QOM-15
TUR/135/2022.75*	n/a	sheep	FMDI	Turkiye	ME-SA/PanAsia-2/QOM-15
TUR/1/2023	n/a	cattle	WRLFMD	Turkiye	ME-SA/PanAsia-2/QOM-15
TUR/24/2022.212*	n/a	cattle	FMDI	Turkiye	ME-SA/PanAsia-2/QOM-15
TUR/66/2022.327*	n/a	sheep	FMDI	Turkiye	ME-SA/PanAsia-2/QOM-15
ISR/2/2021	n/a	goat	WRLFMD	Israel	ME-SA/PanAsia-2/QOM-15
ISR/1/2021	n/a	goat	WRLFMD	Israel	ME-SA/PanAsia-2/QOM-15
ISR/3/2021	n/a	cattle	WRLFMD	Israel	ME-SA/PanAsia-2/QOM-15
ISR/4/2021	n/a	cattle	WRLFMD	Israel	ME-SA/PanAsia-2/QOM-15
401025/ISR/2021*	n/a	goat	KVI	Israel	ME-SA/PanAsia-2/QOM-15
401026/ISR/2021*	n/a	cattle	KVI	Israel	ME-SA/PanAsia-2/QOM-15
401247/ISR/2021*	n/a	cattle	KVI	Israel	ME-SA/PanAsia-2/QOM-15
ISR/6/2021	n/a	cattle	WRLFMD	Israel	ME-SA/PanAsia-2/QOM-15
ISR/5/2021	n/a	cattle	WRLFMD	Israel	ME-SA/PanAsia-2/QOM-15
TUR/183/2020.75*	n/a	cattle	FMDI	Turkiye	ME-SA/PanAsia-2/QOM-15
TUR/170/2020.731*	n/a	cattle	FMDI	Turkiye	ME-SA/PanAsia-2/QOM-15
TUR/13/2022.154*	n/a	cattle	FMDI	Turkiye	ME-SA/PanAsia-2/QOM-15
TUR/6/2022.096*	n/a	cattle	FMDI	Turkiye	ME-SA/PanAsia-2/QOM-15
TUR/131/2022.731*	n/a	sheep	FMDI	Turkiye	ME-SA/PanAsia-2/QOM-15
TUR/132/2022.731*	n/a	sheep	FMDI	Turkiye	ME-SA/PanAsia-2/QOM-15
TUR/43.44/2022.231*	n/a	cattle	FMDI	Turkiye	ME-SA/PanAsia-2/QOM-15
TUR/9/2022.115*	n/a	sheep	FMDI	Turkiye	ME-SA/PanAsia-2/QOM-15
TUR/88/2022.615*	n/a	cattle	FMDI	Turkiye	ME-SA/PanAsia-2/QOM-15
TUR/115/2022.673*	n/a	sheep	FMDI	Turkiye	ME-SA/PanAsia-2/QOM-15
TUR/86/2022.615*	n/a	cattle	FMDI	Turkiye	ME-SA/PanAsia-2/QOM-15
TUR/144/2022.769*	n/a	sheep	FMDI	Turkiye	ME-SA/PanAsia-2/QOM-15
TUR/15/2022.154*	n/a	cattle	FMDI	Turkiye	ME-SA/PanAsia-2/QOM-15

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label	accession	host(s)	lab	country	taxonomic information
TUR/87/2022.615*	n/a	cattle	FMDI	Turkiye	ME-SA/PanAsia-2/QOM-15
TUR/14/2022.154*	n/a	cattle	FMDI	Turkiye	ME-SA/PanAsia-2/QOM-15
TUR/1/2019	n/a	cattle	WRLFMD	Turkiye	ME-SA/PanAsia-2/QOM-15
TUR/4/2019	n/a	cattle	WRLFMD	Turkiye	ME-SA/PanAsia-2/QOM-15
TUR/7/2019	n/a	cattle	WRLFMD	Turkiye	ME-SA/PanAsia-2/QOM-15
TUR/3/2019	n/a	cattle	WRLFMD	Turkiye	ME-SA/PanAsia-2/QOM-15
IRN/15/2016	n/a	sheep	WRLFMD	Iran	ME-SA/PanAsia-2/QOM-15
IRN/6/2015	MN276044	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
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
IRN/8/2005	KY091281	ovine	WRLFMD	Iran	ME-SA/PanAsia-2
TUR/257/2008*	n/a	n/a	FMDI-Ankara	Turkiye	ME-SA/PanAsia-2/TER-08
TUR/264/2009*	n/a	n/a	FMDI-Ankara	Turkiye	ME-SA/PanAsia-2/SAN-09
SRL/2/97	AJ303531	bovine	WRLFMD	Sri Lanka	ME-SA/Sri-97
UKG/35/2001	AJ539141	porcine	PIADC	United Kingdom	ME-SA/PanAsia
TUR/2/2023	n/a	sheep	WRLFMD	Turkiye	ME-SA/PanAsia-2/ANT-10
TUR/106/2022.654*	n/a	sheep	FMDI	Turkiye	ME-SA/PanAsia-2/ANT-10
TUR/143/2022.769*	n/a	sheep	FMDI	Turkiye	ME-SA/PanAsia-2/ANT-10
TUR/99/2022.635*	n/a	cattle	FMDI	Turkiye	ME-SA/PanAsia-2/ANT-10
TUR/149/2022.769*	n/a	sheep	FMDI	Turkiye	ME-SA/PanAsia-2/ANT-10
TUR/101/2022.635*	n/a	sheep	FMDI	Turkiye	ME-SA/PanAsia-2/ANT-10
Otarod_8195/IRN/2020*	OR372145	cattle	UNIV-TEHRAN	Iran	ME-SA/PanAsia-2/ANT-10
TUR/156/2020.635*	n/a	cattle	FMDI	Turkiye	ME-SA/PanAsia-2/ANT-10
IRN/8/2020	n/a	bovine	WRLFMD	Iran	ME-SA/PanAsia-2/ANT-10
IRN/5/2020	n/a	bovine	WRLFMD	Iran	ME-SA/PanAsia-2/ANT-10
IRN/15/2020	n/a	sheep	WRLFMD	Iran	ME-SA/PanAsia-2/ANT-10
Otarod_8198/IRN/2020*	OR372144	cattle	UNIV-TEHRAN	Iran	ME-SA/PanAsia-2/ANT-10
IRN/21/2020	n/a	bovine	WRLFMD	Iran	ME-SA/PanAsia-2/ANT-10
IRN/10/2020	n/a	bovine	WRLFMD	Iran	ME-SA/PanAsia-2/ANT-10
IRN/11/2020	n/a	sheep	WRLFMD	Iran	ME-SA/PanAsia-2/ANT-10
IRN/7/2021	n/a	bovine	WRLFMD	Iran	ME-SA/PanAsia-2/ANT-10
IRN/7/2020	n/a	bovine	WRLFMD	Iran	ME-SA/PanAsia-2/ANT-10
OMN/22Z2044/2020_81*	n/a	cattle	ANSES	Oman	ME-SA/PanAsia-2/ANT-10
OMN/22Z1991/2020_10*	n/a	cattle	ANSES	Oman	ME-SA/PanAsia-2/ANT-10
OMN/22Z2046/2020_83*	n/a	cattle	ANSES	Oman	ME-SA/PanAsia-2/ANT-10
OMN/22Z2043/2020_80*	n/a	cattle	ANSES	Oman	ME-SA/PanAsia-2/ANT-10
OMN/22Z2050/2020_87*	n/a	cattle	ANSES	Oman	ME-SA/PanAsia-2/ANT-10
OMN/22Z1990/2020_9*	n/a	cattle	ANSES	Oman	ME-SA/PanAsia-2/ANT-10
OMN/22Z1992/2020_11*	n/a	cattle	ANSES	Oman	ME-SA/PanAsia-2/ANT-10
OMN/22Z1993/2020_12*	n/a	cattle	ANSES	Oman	ME-SA/PanAsia-2/ANT-10
OMN/22Z2049/2020_86*	n/a	cattle	ANSES	Oman	ME-SA/PanAsia-2/ANT-10
OMN/22Z2045/2020_82*	n/a	cattle	ANSES	Oman	ME-SA/PanAsia-2/ANT-10
OMN/22Z002048/2020_85*	n/a	cattle	ANSES	Oman	ME-SA/PanAsia-2/ANT-10
OMN/22Z2047/2020_84*	n/a	cattle	ANSES	Oman	ME-SA/PanAsia-2/ANT-10
IRN/4/2020	n/a	bovine	WRLFMD	Iran	ME-SA/PanAsia-2/ANT-10
IRN/22/2020	n/a	bovine	WRLFMD	Iran	ME-SA/PanAsia-2/ANT-10
OMN/22Z2116/2020_186*	n/a	cattle	ANSES	Oman	ME-SA/PanAsia-2/ANT-10
OMN/22Z2025/2020_60*	n/a	cattle	ANSES	Oman	ME-SA/PanAsia-2/ANT-10
OMN/22Z2118/2020_188*	n/a	cattle	ANSES	Oman	ME-SA/PanAsia-2/ANT-10
OMN/22Z2023/2020_58*	n/a	cattle	ANSES	Oman	ME-SA/PanAsia-2/ANT-10
OMN/22Z2024/2020_59*	n/a	cattle	ANSES	Oman	ME-SA/PanAsia-2/ANT-10
OMN/22Z2053/2020_92*	n/a	cattle	ANSES	Oman	ME-SA/PanAsia-2/ANT-10
OMN/22Z2026/2020_61*	n/a	cattle	ANSES	Oman	ME-SA/PanAsia-2/ANT-10
OMN/22Z2027/2020_62*	n/a	cattle	ANSES	Oman	ME-SA/PanAsia-2/ANT-10
OMN/22Z2117/2020_187*	n/a	cattle	ANSES	Oman	ME-SA/PanAsia-2/ANT-10
Otarod_9145/IRN/2020*	OQ991937	cattle	UNIV-TEHRAN	Iran	ME-SA/PanAsia-2/ANT-10
Otarod_8127/IRN/2019*	OQ682620	cattle	UNIV-TEHRAN	Iran	ME-SA/PanAsia-2/ANT-10
Otarod_876/IRN/2019*	OQ682623	cattle	UNIV-TEHRAN	Iran	ME-SA/PanAsia-2/ANT-10
IRN/88/2009	KY091282	n/a	WRLFMD	Iran	ME-SA/PanAsia-2/ANT-10

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label	accession	host(s)	lab	country	taxonomic information
TAI/189/87*	KY091288	bovine	TRRL	Thailand	SEA/Tai-87
ISA/1/62	AJ303500	n/a	WRLFMD	Indonesia	ISA-1

*, not a WRLFMD Reference Number

n/a, not available