

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

Genotyping Report v2

FMDV serotype: O
Country: Ethiopia
Year: 2020
Batch: WRLMEG/2023/00029
No. of sequences: 1
Report date: 22nd September 2023
Report generated by: Nick Knowles
Report checked by: Don King



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

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Virus sample name:	ETH02/2023
Sender reference:	ETH02/23
Location of origin:	Sebata, Oromia
Country of origin:	Ethiopia
Date of collection:	2020
Host species:	bovine
Serotype:	O
Topotype:	EA-4
Lineage:	
Sublineage:	
Sequence length:	636
Ambiguities:	0
Material submitted for sequencing:	n/a
Harvest date of material:	n/a
Primers:	O-1C272F/EUR-2B52R
Received for sequencing:	n/a
Created:	20/09/2023
Last updated:	20/09/2023
VIBASys IDs: sample 53979, genome 53980, sequence viba_53981, sequencing info 53982	

Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_51433	ETH/12/2020	bovine	100.0	0	O	EA-4		
viba_51401	ETH/27/2019	bovine	98.7	0	O	EA-4		
viba_51405	ETH/28/2019	bovine	98.7	0	O	EA-4		
viba_51397	ETH/26/2019	bovine	97.8	4	O	EA-4		
viba_33475	ETH/6/2016	cattle	97.3	0	O	EA-4		
viba_33463	ETH/2/2016	cattle	97.3	0	O	EA-4		
viba_33511	ETH/22/2016	cattle	97.2	0	O	EA-4		
viba_33872	ETH/73/2016	bovine	97.2	0	O	EA-4		
viba_33467	ETH/3/2016	cattle	97.2	0	O	EA-4		
viba_33499	ETH/13/2016	cattle	97.2	0	O	EA-4		

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_50	UGA/17/98		88.1	0	O	EA-4		
viba_621	ETH/58/2005	bovine	87.4	0	O	EA-4		
viba_116	SUD/2/86	bovine	86.2	0	O	EA-3		
viba_1893	K40/84	bovine	86.2	0	O	EA-1		
viba_854	ETH/1/2007	cattle	85.5	0	O	EA-3		
viba_523	K83/79		85.4	0	O	EA-1		
viba_408	ETH/3/2004	cattle	85.2	0	O	EA-3		
viba_62	ETH/2/2006	bovine	85.1	0	O	EA-3		
viba_30238	MUR/19/2016	cattle	84.8	0	O	ME-SA	Ind-2001	e
viba_285	UKG/35/2001	porcine	84.7	0	O	ME-SA	PanAsia	

Report on FMDV O in Ethiopia in 2023

Batch: WRLMEG/2023/00029



*, not a WRLFMD Reference Number

Analysis Parameters

VP1 subsequence extractor:	vp1_O
Query sequence set:	WRLMEG/2023/00029-Ethiopia-O (1 sequences)
Sequence database set:	allseqs_O (6104 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:	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
ETH02/2023*	n/a	bovine	BVI	Ethiopia	EA-4
ETH/12/2020	n/a	bovine	WRLFMD	Ethiopia	EA-4
ETH/26/2019	n/a	bovine	WRLFMD	Ethiopia	EA-4
ETH/28/2019	n/a	bovine	WRLFMD	Ethiopia	EA-4
ETH/27/2019	n/a	bovine	WRLFMD	Ethiopia	EA-4
ETH/16/2016	MN987435	cattle	WRLFMD	Ethiopia	EA-4
ETH/22/2016	MN987437	cattle	WRLFMD	Ethiopia	EA-4
ETH/13/2016	MN987434	cattle	WRLFMD	Ethiopia	EA-4
ETH/6/2016	MN987428	cattle	WRLFMD	Ethiopia	EA-4
ETH/61/2016	MN987450	bovine	WRLFMD	Ethiopia	EA-4
ETH/50/2016	MN987448	bovine	WRLFMD	Ethiopia	EA-4
ETH/29/2016	MN987439	bovine	WRLFMD	Ethiopia	EA-4
ETH/32/2016	MN987441	bovine	WRLFMD	Ethiopia	EA-4
ETH/37/2016	MN987445	bovine	WRLFMD	Ethiopia	EA-4
ETH/48/2016	MN987446	bovine	WRLFMD	Ethiopia	EA-4
ETH/2/2016	MN987425	cattle	WRLFMD	Ethiopia	EA-4
ETH/7/2016	MN987429	cattle	WRLFMD	Ethiopia	EA-4
ETH/11/2016	MN987432	cattle	WRLFMD	Ethiopia	EA-4
ETH/18/2016	MN987436	cattle	WRLFMD	Ethiopia	EA-4
ETH/8/2016	MN987430	cattle	WRLFMD	Ethiopia	EA-4
ETH/9/2016	MN987431	cattle	WRLFMD	Ethiopia	EA-4
ETH/12/2016	MN987433	cattle	WRLFMD	Ethiopia	EA-4
ETH/73/2016	MN987451	bovine	WRLFMD	Ethiopia	EA-4
ETH/3/2016	MN987426	cattle	WRLFMD	Ethiopia	EA-4
ETH/4/2016	MN987427	cattle	WRLFMD	Ethiopia	EA-4
ETH/25/2016	MN987438	bovine	WRLFMD	Ethiopia	EA-4
ETH/14/2019	MN987489	cattle	WRLFMD	Ethiopia	EA-4
ETH/36/2016	MN987444	bovine	WRLFMD	Ethiopia	EA-4
ETH/51/2016	MN987449	bovine	WRLFMD	Ethiopia	EA-4
ETH/30/2016	MN987440	bovine	WRLFMD	Ethiopia	EA-4
ETH/34/2016	MN987442	bovine	WRLFMD	Ethiopia	EA-4
ETH/35/2016	MN987443	bovine	WRLFMD	Ethiopia	EA-4
ETH/49/2016	MN987447	bovine	WRLFMD	Ethiopia	EA-4
ETH/24/2019	n/a	bovine	WRLFMD	Ethiopia	EA-4
ETH/8/2020	n/a	bovine	WRLFMD	Ethiopia	EA-4
KEN/100/2010	KF135281	cattle	WRLFMD	Kenya	EA-4

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label	accession	host(s)	lab	country	taxonomic information
ETH/1/2016	MN987424	bovine	WRLFMD	Ethiopia	EA-4
ETH/9/2013	MN518152	bovine	WRLFMD	Ethiopia	EA-4
ETH/8/2013	MN529584	bovine	WRLFMD	Ethiopia	EA-4
ETH/15/2013	MN518154	bovine	WRLFMD	Ethiopia	EA-4
ETH/13/2013	MN518153	bovine	WRLFMD	Ethiopia	EA-4
ETH/12/2013	MN529585	bovine	WRLFMD	Ethiopia	EA-4
ETH/14/2013	MN529586	bovine	WRLFMD	Ethiopia	EA-4
ETH/4/2013	MN987419	bovine	WRLFMD	Ethiopia	EA-4
ADJ-309-P/UGA/2017*	MH367379	cattle	PIADC	Uganda	EA-4
AMU-200-P/UGA/2017*	MH367380	cattle	PIADC	Uganda	EA-4
UGA/17/98	HM211075	n/a	WRLFMD	Uganda	EA-4
ETH/58/2005	FJ798141	bovine	WRLFMD	Ethiopia	EA-4
ETH/59/2005	FJ798142	bovine	WRLFMD	Ethiopia	EA-4
ETH/60/2005	FJ798143	bovine	WRLFMD	Ethiopia	EA-4
ETH/2/2006	FJ798127	bovine	WRLFMD	Ethiopia	EA-3
SUD/2/86	DQ165075	bovine	WRLFMD	Sudan	EA-3
SUD/7/89	GU566042	n/a	WRLFMD	Sudan	EA-3
SUD/3/89	GU566038	n/a	WRLFMD	Sudan	EA-3
SUD/4/89	GU566039	n/a	WRLFMD	Sudan	EA-3
SUD/5/89	GU566040	n/a	WRLFMD	Sudan	EA-3
SUD/6/89	GU566041	n/a	WRLFMD	Sudan	EA-3
YEM/6/83	n/a	ovine	WRLFMD	Yemen	EA-3
ETH/1/79	HM211077	cattle	WRLFMD	Ethiopia	EA-3
ETH/11/2005	FJ798107	bovine	WRLFMD	Ethiopia	EA-3
SOM/1/2007	n/a	cattle	WRLFMD	Somalia	EA-3
SOM/2/2007	n/a	cattle	WRLFMD	Somalia	EA-3
YEM/37/2009	n/a	cattle	WRLFMD	Yemen	EA-3
YEM/36/2009	n/a	cattle	WRLFMD	Yemen	EA-3
YEM/4/2008	n/a	cattle	WRLFMD	Yemen	EA-3
YEM/7/2008	n/a	cattle	WRLFMD	Yemen	EA-3
YEM/5/2008	n/a	cattle	WRLFMD	Yemen	EA-3
YEM/8/2008	n/a	cattle	WRLFMD	Yemen	EA-3
YEM/6/2008	n/a	cattle	WRLFMD	Yemen	EA-3
ETH/31/2008	MN987362	cattle	WRLFMD	Ethiopia	EA-3
ETH/32/2008	MN987363	cattle	WRLFMD	Ethiopia	EA-3
YEM/34/2009	n/a	cattle	WRLFMD	Yemen	EA-3
YEM/10/2008	n/a	cattle	WRLFMD	Yemen	EA-3
YEM/23/2009	n/a	cattle	WRLFMD	Yemen	EA-3
YEM/24/2009	n/a	cattle	WRLFMD	Yemen	EA-3
YEM/48/2004	n/a	cattle	WRLFMD	Yemen	EA-3
YEM/28/2003	n/a	cattle	WRLFMD	Yemen	EA-3
YEM/22/2003	n/a	cattle	WRLFMD	Yemen	EA-3
YEM/3/92	n/a	n/a	WRLFMD	Yemen	EA-3
YEM/4/95	n/a	n/a	WRLFMD	Yemen	EA-3
KEN/3/98	n/a	bovine	WRLFMD	Kenya	EA-3
KEN/7/98	KF135266	bovine	WRLFMD	Kenya	EA-3
KEN/1/99	KF135267	bovine	WRLFMD	Kenya	EA-3
ETH/3/2004	FJ798109	cattle	WRLFMD	Ethiopia	EA-3
ETH/1/2007	FJ798137	cattle	WRLFMD	Ethiopia	EA-3
EGY/1/74	n/a	n/a	WRLFMD	Egypt	EA-1
K83/79*	AJ303511	n/a	WRLFMD	Kenya	EA-1
BUN/1/84	n/a	n/a	WRLFMD	Burundi	EA-1
BUN/10/86	n/a	n/a	WRLFMD	Burundi	EA-1
K40/84*	HM756592	bovine	Makerere University	Kenya	EA-1
K40/84*	KY091280	bovine	WRLFMD	Kenya	EA-1
TAI/189/87*	KY091288	bovine	TRRL	Thailand	SEA
UKG/35/2001	AJ539141	porcine	PIADC	United Kingdom	ME-SA/PanAsia
MUR/19/2016	MG972510	cattle	WRLFMD	Mauritius	ME-SA/Ind-2001/e
SAU/3/2016	MG972595	bovine	WRLFMD	Saudi Arabia	ME-SA/Ind-2001/e
SAU/2/2016	MG972594	bovine	WRLFMD	Saudi Arabia	ME-SA/Ind-2001/e
SRL/11/2018	n/a	cattle	WRLFMD	Sri Lanka	ME-SA/Ind-2001/d
ALG/1/2014	MG972462	n/a	WRLFMD	Algeria	ME-SA/Ind-2001/d
1628-1468/Algeria/2014*	n/a	n/a	IZSLER	Algeria	ME-SA/Ind-2001/d
ALG/2/2014	MG972463	n/a	WRLFMD	Algeria	ME-SA/Ind-2001/d
ISA/1/62	AJ303500	n/a	WRLFMD	Indonesia	ISA-1

*, not a WRLFMD Reference Number
n/a, not available