

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

## Genotyping Report

FMDV serotype: O  
Country: Ethiopia  
Year: 2019, 2020, 2021, 2022  
Batch: WRLFMD/2022/000012  
No. of sequences: 19  
Report date: 9th August 2022  
Report generated by: Nick Knowles  
Report checked by: Jemma Wadsworth



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Virus sample name:	ETH/24/2019
Sender reference:	25129
Location of origin:	Guargua, Awi, Amhara
Country of origin:	Ethiopia
Date of collection:	24/08/2019
Host species:	bovine
Serotype:	O
Topotype:	EA-4
Lineage:	
Sublineage:	
Sequence length:	633
Ambiguities:	0
Material submitted for sequencing:	WRL-LFBK1
Harvest date of material:	21/07/2022
Primers:	O-1C244F/EUR-2B52R; FMD-3161F/FMD-4303R
Received for sequencing:	05/08/2022
Created:	09/08/2022
Last updated:	09/08/2022
VIBASys IDs: sample 51391, genome 51392, sequence viba_51393, sequencing info 51394	

### Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_51421	ETH/8/2020	bovine	100.0	0	O	EA-4		
viba_33463	ETH/2/2016	cattle	97.2	0	O	EA-4		
viba_33824	ETH/29/2016	bovine	97.0	0	O	EA-4		
viba_33832	ETH/32/2016	bovine	97.0	0	O	EA-4		
viba_33860	ETH/50/2016	bovine	96.9	0	O	EA-4		
viba_33852	ETH/48/2016	bovine	96.9	0	O	EA-4		
viba_33848	ETH/37/2016	bovine	96.9	0	O	EA-4		
viba_33868	ETH/61/2016	bovine	96.9	0	O	EA-4		
viba_33844	ETH/36/2016	bovine	96.5	0	O	EA-4		
viba_33836	ETH/34/2016	bovine	96.5	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		89.5	0	O	EA-4		
viba_621	ETH/58/2005	bovine	87.7	0	O	EA-4		
viba_116	SUD/2/86	bovine	87.0	0	O	EA-3		
viba_523	K83/79		86.1	0	O	EA-1		
viba_854	ETH/1/2007	cattle	85.8	0	O	EA-3		
viba_408	ETH/3/2004	cattle	85.5	0	O	EA-3		
viba_62	ETH/2/2006	bovine	85.4	0	O	EA-3		
viba_285	UKG/35/2001	porcine	85.3	0	O	ME-SA	PanAsia	
viba_505	TUR/264/2009		85.1	0	O	ME-SA	PanAsia-2	SAN-09
viba_541	OMN/7/2001	bovine	85.0	0	O	ME-SA	Ind-2001	b

Virus sample name:	ETH/26/2019
Sender reference:	38869
Location of origin:	Shambu, Huru Guduru, Oromia
Country of origin:	Ethiopia
Date of collection:	04/10/2019
Host species:	bovine
Serotype:	O
Topotype:	EA-4
Lineage:	
Sublineage:	
Sequence length:	636
Ambiguities:	4
Material submitted for sequencing:	WRL-LFBK1
Harvest date of material:	18/06/2022
Primers:	O-1C244F/EUR-2B52R; FMD-3161F/FMD-4303R
Received for sequencing:	05/08/2022
Created:	09/08/2022
Last updated:	09/08/2022
VIBASys IDs: sample 51395, genome 51396, sequence viba_51397, sequencing info 51398	

#### Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_51405	ETH/28/2019	bovine	98.7	0	O	EA-4		
viba_51401	ETH/27/2019	bovine	98.7	0	O	EA-4		
viba_51433	ETH/12/2020	bovine	97.8	0	O	EA-4		
viba_33463	ETH/2/2016	cattle	97.3	0	O	EA-4		
viba_33475	ETH/6/2016	cattle	97.3	0	O	EA-4		
viba_33467	ETH/3/2016	cattle	97.2	0	O	EA-4		
viba_33872	ETH/73/2016	bovine	97.2	0	O	EA-4		
viba_33511	ETH/22/2016	cattle	97.2	0	O	EA-4		
viba_33499	ETH/13/2016	cattle	97.2	0	O	EA-4		
viba_33503	ETH/16/2016	cattle	97.0	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		88.6	0	O	EA-4		
viba_621	ETH/58/2005	bovine	87.6	0	O	EA-4		
viba_116	SUD/2/86	bovine	86.0	0	O	EA-3		
viba_523	K83/79		85.5	0	O	EA-1		
viba_854	ETH/1/2007	cattle	85.2	0	O	EA-3		
viba_62	ETH/2/2006	bovine	85.1	0	O	EA-3		
viba_408	ETH/3/2004	cattle	84.7	0	O	EA-3		
viba_293	BHU/3/2009	cattle	84.6	0	O	ME-SA	Ind-2001	d
viba_580	UGA/5/96	bovine	84.4	0	O	EA-1		
viba_74	KEN/5/2002	bovine	84.3	0	O	EA-2		

Virus sample name:	ETH/27/2019
Sender reference:	32549
Location of origin:	Sebata, North South Shoa, Oromia
Country of origin:	Ethiopia
Date of collection:	18/10/2019
Host species:	bovine
Serotype:	O
Topotype:	EA-4
Lineage:	
Sublineage:	
Sequence length:	636
Ambiguities:	0
Material submitted for sequencing:	WRL-LFBK1
Harvest date of material:	17/06/2022
Primers:	O-1C244F/EUR-2B52R; FMD-3161F/FMD-4303R
Received for sequencing:	05/08/2022
Created:	09/08/2022
Last updated:	09/08/2022
VIBASys IDs: sample 51399, genome 51400, sequence viba_51401, sequencing info 51402	

#### Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_51405	ETH/28/2019	bovine	100.0	0	O	EA-4		
viba_51397	ETH/26/2019	bovine	98.7	4	O	EA-4		
viba_51433	ETH/12/2020	bovine	98.7	0	O	EA-4		
viba_33463	ETH/2/2016	cattle	98.3	0	O	EA-4		
viba_33852	ETH/48/2016	bovine	98.3	0	O	EA-4		
viba_33848	ETH/37/2016	bovine	98.3	0	O	EA-4		
viba_33475	ETH/6/2016	cattle	98.3	0	O	EA-4		
viba_33467	ETH/3/2016	cattle	98.1	0	O	EA-4		
viba_33872	ETH/73/2016	bovine	98.1	0	O	EA-4		
viba_33511	ETH/22/2016	cattle	98.1	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		88.9	0	O	EA-4		
viba_621	ETH/58/2005	bovine	88.2	0	O	EA-4		
viba_116	SUD/2/86	bovine	86.8	0	O	EA-3		
viba_854	ETH/1/2007	cattle	86.3	0	O	EA-3		
viba_523	K83/79		86.2	0	O	EA-1		
viba_62	ETH/2/2006	bovine	85.7	0	O	EA-3		
viba_408	ETH/3/2004	cattle	85.5	0	O	EA-3		
viba_705	KUW/3/97	bovine	85.2	0	O	ME-SA	Ind-2001	a
viba_580	UGA/5/96	bovine	85.1	0	O	EA-1		
viba_359	Manisa/TUR/69		85.1	0	O	ME-SA		

Virus sample name:	ETH/28/2019
Sender reference:	32553
Location of origin:	Sebata, North South Shoa, Oromia
Country of origin:	Ethiopia
Date of collection:	18/10/2019
Host species:	bovine
Serotype:	O
Topotype:	EA-4
Lineage:	
Sublineage:	
Sequence length:	636
Ambiguities:	0
Material submitted for sequencing:	WRL-LFBK1
Harvest date of material:	18/06/2022
Primers:	O-1C244F/EUR-2B52R; FMD-3161F/FMD-4303R
Received for sequencing:	05/08/2022
Created:	09/08/2022
Last updated:	09/08/2022

VIBASys IDs: sample 51403, genome 51404, sequence viba\_51405, sequencing info 51406

#### Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_51401	ETH/27/2019	bovine	100.0	0	O	EA-4		
viba_51397	ETH/26/2019	bovine	98.7	4	O	EA-4		
viba_51433	ETH/12/2020	bovine	98.7	0	O	EA-4		
viba_33463	ETH/2/2016	cattle	98.3	0	O	EA-4		
viba_33852	ETH/48/2016	bovine	98.3	0	O	EA-4		
viba_33848	ETH/37/2016	bovine	98.3	0	O	EA-4		
viba_33475	ETH/6/2016	cattle	98.3	0	O	EA-4		
viba_33467	ETH/3/2016	cattle	98.1	0	O	EA-4		
viba_33872	ETH/73/2016	bovine	98.1	0	O	EA-4		
viba_33511	ETH/22/2016	cattle	98.1	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		88.9	0	O	EA-4		
viba_621	ETH/58/2005	bovine	88.2	0	O	EA-4		
viba_116	SUD/2/86	bovine	86.8	0	O	EA-3		
viba_854	ETH/1/2007	cattle	86.3	0	O	EA-3		
viba_523	K83/79		86.2	0	O	EA-1		
viba_62	ETH/2/2006	bovine	85.7	0	O	EA-3		
viba_408	ETH/3/2004	cattle	85.5	0	O	EA-3		
viba_705	KUW/3/97	bovine	85.2	0	O	ME-SA	Ind-2001	a
viba_580	UGA/5/96	bovine	85.1	0	O	EA-1		
viba_359	Manisa/TUR/69		85.1	0	O	ME-SA		

Virus sample name:	ETH/29/2019
Sender reference:	5296
Location of origin:	Adama, East Shoa, Oromia
Country of origin:	Ethiopia
Date of collection:	15/11/2019
Host species:	bovine
Serotype:	O
Topotype:	EA-3
Lineage:	
Sublineage:	
Sequence length:	633
Ambiguities:	0
Material submitted for sequencing:	WRL-LFBK1
Harvest date of material:	18/06/2022
Primers:	O-1C244F/EUR-2B52R; FMD-3161F/FMD-4303R
Received for sequencing:	05/08/2022
Created:	09/08/2022
Last updated:	09/08/2022
VIBASys IDs: sample 51407, genome 51408, sequence viba_51409, sequencing info 51410	

#### Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_51445	ETH/17/2020	bovine	100.0	0	O	EA-3		
viba_51437	ETH/15/2020	bovine	99.7	0	O	EA-3		
viba_51429	ETH/11/2020	bovine	99.7	0	O	EA-3		
viba_51425	ETH/10/2020	bovine	99.7	0	O	EA-3		
viba_51441	ETH/16/2020	bovine	99.7	0	O	EA-3		
viba_51453	ETH/2/2021	bovine	99.7	0	O	EA-3		
viba_47690	BAR/18/2021	cattle	99.5	0	O	EA-3		
viba_47686	BAR/17/2021	cattle	99.5	0	O	EA-3		
viba_47694	BAR/20/2021	cattle	99.4	0	O	EA-3		
viba_51461	ETH/5/2021	bovine	99.4	0	O	EA-3		

#### 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_854	ETH/1/2007	cattle	91.5	0	O	EA-3		
viba_116	SUD/2/86	bovine	90.0	0	O	EA-3		
viba_408	ETH/3/2004	cattle	89.4	0	O	EA-3		
viba_30238	MUR/19/2016	cattle	86.9	0	O	ME-SA	Ind-2001	e
viba_285	UKG/35/2001	porcine	86.8	0	O	ME-SA	PanAsia	
viba_850	NEP/1/2015	cattle	86.5	1	O	ME-SA	PanAsia-2	KAT-15
viba_617	IND/53/79	bovine	86.4	0	O	ME-SA		
viba_650	IRN/8/2005	ovine	86.1	0	O	ME-SA	PanAsia-2	
viba_766	IRN/31/2009	cattle	86.1	0	O	ME-SA	PanAsia-2	FAR-09
viba_74	KEN/5/2002	bovine	86.1	0	O	EA-2		

Virus sample name:	ETH/2/2020
Sender reference:	2222
Location of origin:	Gomole, Borana, Oromia
Country of origin:	Ethiopia
Date of collection:	20/01/2020
Host species:	bovine
Serotype:	O
Topotype:	EA-3
Lineage:	
Sublineage:	
Sequence length:	633
Ambiguities:	0
Material submitted for sequencing:	WRL-LFBK1
Harvest date of material:	22/06/2022
Primers:	O-1C244F/EUR-2B52R; FMD-3161F/FMD-4303R
Received for sequencing:	05/08/2022
Created:	09/08/2022
Last updated:	09/08/2022

VIBASys IDs: sample 51411, genome 51412, sequence viba\_51413, sequencing info 51414

#### Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_25427	ETH/6/2015	cattle	95.1	0	O	EA-3		
viba_51461	ETH/5/2021	bovine	93.5	0	O	EA-3		
viba_51457	ETH/4/2021	bovine	93.5	0	O	EA-3		
viba_51429	ETH/11/2020	bovine	93.2	0	O	EA-3		
viba_51425	ETH/10/2020	bovine	93.2	0	O	EA-3		
viba_51445	ETH/17/2020	bovine	93.2	0	O	EA-3		
viba_51409	ETH/29/2019	bovine	93.2	0	O	EA-3		
viba_51437	ETH/15/2020	bovine	92.9	0	O	EA-3		
viba_51441	ETH/16/2020	bovine	92.9	0	O	EA-3		
viba_51453	ETH/2/2021	bovine	92.9	0	O	EA-3		

#### 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_854	ETH/1/2007	cattle	90.0	0	O	EA-3		
viba_116	SUD/2/86	bovine	88.9	0	O	EA-3		
viba_408	ETH/3/2004	cattle	88.8	0	O	EA-3		
viba_523	K83/79		87.1	0	O	EA-1		
viba_621	ETH/58/2005	bovine	86.2	0	O	EA-4		
viba_617	IND/53/79	bovine	86.1	0	O	ME-SA		
viba_576	IND/R2/75		85.7	0	O	ME-SA		
viba_285	UKG/35/2001	porcine	85.7	0	O	ME-SA	PanAsia	
viba_850	NEP/1/2015	cattle	85.6	1	O	ME-SA	PanAsia-2	KAT-15
viba_705	KUW/3/97	bovine	85.4	0	O	ME-SA	Ind-2001	a

Virus sample name:	ETH/5/2020
Sender reference:	32302
Location of origin:	Alemgena, North South Shoa, Oromia
Country of origin:	Ethiopia
Date of collection:	10/02/2020
Host species:	bovine
Serotype:	O
Topotype:	EA-3
Lineage:	
Sublineage:	
Sequence length:	633
Ambiguities:	0
Material submitted for sequencing:	WRL-LFBK1
Harvest date of material:	21/06/2022
Primers:	O-1C244F/EUR-2B52R; FMD-3161F/FMD-4303R
Received for sequencing:	05/08/2022
Created:	09/08/2022
Last updated:	09/08/2022
VIBASys IDs: sample 51415, genome 51416, sequence viba_51417, sequencing info 51418	

#### Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_41533	ETH/7/2019	cattle	99.5	2	O	EA-3		
viba_41541	ETH/9/2019	cattle	99.5	0	O	EA-3		
viba_41537	ETH/8/2019	cattle	99.4	2	O	EA-3		
viba_40451	ETH/21/2018	cattle	98.6	0	O	EA-3		
viba_40447	ETH/20/2018	cattle	98.6	0	O	EA-3		
viba_41505	ETH/81/2018	cattle	98.6	0	O	EA-3		
viba_41521	ETH/4/2019	cattle	98.4	0	O	EA-3		
viba_40467	ETH/25/2018	cattle	98.3	0	O	EA-3		
viba_40455	ETH/22/2018	cattle	98.3	0	O	EA-3		
viba_40471	ETH/26/2018	cattle	98.3	0	O	EA-3		

#### 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_116	SUD/2/86	bovine	88.5	0	O	EA-3		
viba_408	ETH/3/2004	cattle	86.2	0	O	EA-3		
viba_854	ETH/1/2007	cattle	85.6	0	O	EA-3		
viba_354	PAK/16/2010	cattle	84.7	0	O	ME-SA	PanAsia-2	PUN-10
viba_523	K83/79		84.7	0	O	EA-1		
viba_617	IND/53/79	bovine	84.7	0	O	ME-SA		
viba_666	IRN/18/2010	cattle	84.5	0	O	ME-SA	PanAsia-2	BAL-09
viba_766	IRN/31/2009	cattle	84.5	0	O	ME-SA	PanAsia-2	FAR-09
viba_285	UKG/35/2001	porcine	84.3	0	O	ME-SA	PanAsia	
viba_576	IND/R2/75		84.2	0	O	ME-SA		



Virus sample name:	ETH/8/2020
Sender reference:	23595
Location of origin:	Kuyu, Finine Special Zone, Oromia
Country of origin:	Ethiopia
Date of collection:	23/04/2020
Host species:	bovine
Serotype:	O
Topotype:	EA-4
Lineage:	
Sublineage:	
Sequence length:	633
Ambiguities:	0
Material submitted for sequencing:	WRL-LFBK2
Harvest date of material:	23/06/2022
Primers:	O-1C244F/EUR-2B52R; FMD-3161F/FMD-4303R
Received for sequencing:	05/08/2022
Created:	09/08/2022
Last updated:	09/08/2022
VIBASys IDs: sample 51419, genome 51420, sequence viba_51421, sequencing info 51422	

#### Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_51393	ETH/24/2019	bovine	100.0	0	O	EA-4		
viba_33463	ETH/2/2016	cattle	97.2	0	O	EA-4		
viba_33824	ETH/29/2016	bovine	97.0	0	O	EA-4		
viba_33832	ETH/32/2016	bovine	97.0	0	O	EA-4		
viba_33860	ETH/50/2016	bovine	96.9	0	O	EA-4		
viba_33852	ETH/48/2016	bovine	96.9	0	O	EA-4		
viba_33848	ETH/37/2016	bovine	96.9	0	O	EA-4		
viba_33868	ETH/61/2016	bovine	96.9	0	O	EA-4		
viba_33844	ETH/36/2016	bovine	96.5	0	O	EA-4		
viba_33836	ETH/34/2016	bovine	96.5	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		89.5	0	O	EA-4		
viba_621	ETH/58/2005	bovine	87.7	0	O	EA-4		
viba_116	SUD/2/86	bovine	87.0	0	O	EA-3		
viba_523	K83/79		86.1	0	O	EA-1		
viba_854	ETH/1/2007	cattle	85.8	0	O	EA-3		
viba_408	ETH/3/2004	cattle	85.5	0	O	EA-3		
viba_62	ETH/2/2006	bovine	85.4	0	O	EA-3		
viba_285	UKG/35/2001	porcine	85.3	0	O	ME-SA	PanAsia	
viba_505	TUR/264/2009		85.1	0	O	ME-SA	PanAsia-2	SAN-09
viba_541	OMN/7/2001	bovine	85.0	0	O	ME-SA	Ind-2001	b

Virus sample name:	ETH/10/2020
Sender reference:	110
Location of origin:	Sodo, Woilaita Sodo, SNNPR
Country of origin:	Ethiopia
Date of collection:	21/05/2020
Host species:	bovine
Serotype:	O
Topotype:	EA-3
Lineage:	
Sublineage:	
Sequence length:	633
Ambiguities:	0
Material submitted for sequencing:	WRL-LFBK1
Harvest date of material:	22/06/2022
Primers:	O-1C244F/EUR-2B52R; FMD-3161F/FMD-4303R
Received for sequencing:	05/08/2022
Created:	09/08/2022
Last updated:	09/08/2022

VIBASys IDs: sample 51423, genome 51424, sequence viba\_51425, sequencing info 51426

#### Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_51429	ETH/11/2020	bovine	100.0	0	O	EA-3		
viba_51437	ETH/15/2020	bovine	99.7	0	O	EA-3		
viba_51453	ETH/2/2021	bovine	99.7	0	O	EA-3		
viba_51445	ETH/17/2020	bovine	99.7	0	O	EA-3		
viba_51409	ETH/29/2019	bovine	99.7	0	O	EA-3		
viba_47690	BAR/18/2021	cattle	99.5	0	O	EA-3		
viba_47686	BAR/17/2021	cattle	99.5	0	O	EA-3		
viba_47694	BAR/20/2021	cattle	99.4	0	O	EA-3		
viba_51461	ETH/5/2021	bovine	99.4	0	O	EA-3		
viba_51441	ETH/16/2020	bovine	99.4	0	O	EA-3		

#### 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_854	ETH/1/2007	cattle	91.5	0	O	EA-3		
viba_116	SUD/2/86	bovine	90.0	0	O	EA-3		
viba_408	ETH/3/2004	cattle	89.4	0	O	EA-3		
viba_30238	MUR/19/2016	cattle	86.9	0	O	ME-SA	Ind-2001	e
viba_285	UKG/35/2001	porcine	86.8	0	O	ME-SA	PanAsia	
viba_617	IND/53/79	bovine	86.4	0	O	ME-SA		
viba_74	KEN/5/2002	bovine	86.4	0	O	EA-2		
viba_705	KUW/3/97	bovine	86.4	0	O	ME-SA	Ind-2001	a
viba_850	NEP/1/2015	cattle	86.2	1	O	ME-SA	PanAsia-2	KAT-15
viba_650	IRN/8/2005	ovine	86.1	0	O	ME-SA	PanAsia-2	

Virus sample name:	ETH/11/2020
Sender reference:	108
Location of origin:	Sodo, Woilaita Sodo, SNNPR
Country of origin:	Ethiopia
Date of collection:	21/05/2020
Host species:	bovine
Serotype:	O
Topotype:	EA-3
Lineage:	
Sublineage:	
Sequence length:	633
Ambiguities:	0
Material submitted for sequencing:	WRL-LFBK1
Harvest date of material:	22/06/2022
Primers:	O-1C244F/EUR-2B52R; FMD-3161F/FMD-4303R
Received for sequencing:	05/08/2022
Created:	09/08/2022
Last updated:	09/08/2022

VIBASys IDs: sample 51427, genome 51428, sequence viba\_51429, sequencing info 51430

#### Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_51425	ETH/10/2020	bovine	100.0	0	O	EA-3		
viba_51437	ETH/15/2020	bovine	99.7	0	O	EA-3		
viba_51453	ETH/2/2021	bovine	99.7	0	O	EA-3		
viba_51445	ETH/17/2020	bovine	99.7	0	O	EA-3		
viba_51409	ETH/29/2019	bovine	99.7	0	O	EA-3		
viba_47690	BAR/18/2021	cattle	99.5	0	O	EA-3		
viba_47686	BAR/17/2021	cattle	99.5	0	O	EA-3		
viba_47694	BAR/20/2021	cattle	99.4	0	O	EA-3		
viba_51461	ETH/5/2021	bovine	99.4	0	O	EA-3		
viba_51441	ETH/16/2020	bovine	99.4	0	O	EA-3		

#### 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_854	ETH/1/2007	cattle	91.5	0	O	EA-3		
viba_116	SUD/2/86	bovine	90.0	0	O	EA-3		
viba_408	ETH/3/2004	cattle	89.4	0	O	EA-3		
viba_30238	MUR/19/2016	cattle	86.9	0	O	ME-SA	Ind-2001	e
viba_285	UKG/35/2001	porcine	86.8	0	O	ME-SA	PanAsia	
viba_617	IND/53/79	bovine	86.4	0	O	ME-SA		
viba_74	KEN/5/2002	bovine	86.4	0	O	EA-2		
viba_705	KUW/3/97	bovine	86.4	0	O	ME-SA	Ind-2001	a
viba_850	NEP/1/2015	cattle	86.2	1	O	ME-SA	PanAsia-2	KAT-15
viba_650	IRN/8/2005	ovine	86.1	0	O	ME-SA	PanAsia-2	

Virus sample name:	ETH/12/2020
Sender reference:	1792
Location of origin:	Seбата, North South Shoa, Oromia
Country of origin:	Ethiopia
Date of collection:	21/10/2020
Host species:	bovine
Serotype:	O
Topotype:	EA-4
Lineage:	
Sublineage:	
Sequence length:	636
Ambiguities:	0
Material submitted for sequencing:	WRL-LFBK1
Harvest date of material:	22/06/2022
Primers:	O-1C244F/EUR-2B52R; FMD-3161F/FMD-4303R
Received for sequencing:	05/08/2022
Created:	09/08/2022
Last updated:	09/08/2022
VIBASys IDs: sample 51431, genome 51432, sequence viba_51433, sequencing info 51434	

#### Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_51405	ETH/28/2019	bovine	98.7	0	O	EA-4		
viba_51401	ETH/27/2019	bovine	98.7	0	O	EA-4		
viba_51397	ETH/26/2019	bovine	97.8	4	O	EA-4		
viba_33463	ETH/2/2016	cattle	97.3	0	O	EA-4		
viba_33475	ETH/6/2016	cattle	97.3	0	O	EA-4		
viba_33467	ETH/3/2016	cattle	97.2	0	O	EA-4		
viba_33872	ETH/73/2016	bovine	97.2	0	O	EA-4		
viba_33511	ETH/22/2016	cattle	97.2	0	O	EA-4		
viba_33499	ETH/13/2016	cattle	97.2	0	O	EA-4		
viba_33503	ETH/16/2016	cattle	97.0	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_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	
viba_580	UGA/5/96	bovine	84.6	0	O	EA-1		

Virus sample name:	ETH/15/2020
Sender reference:	50298
Location of origin:	Hankole, East Shoa, Oromia
Country of origin:	Ethiopia
Date of collection:	15/12/2020
Host species:	bovine
Serotype:	O
Topotype:	EA-3
Lineage:	
Sublineage:	
Sequence length:	633
Ambiguities:	0
Material submitted for sequencing:	WRL-LFBK1
Harvest date of material:	06/07/2022
Primers:	O-1C244F/EUR-2B52R; FMD-3161F/FMD-4303R
Received for sequencing:	05/08/2022
Created:	09/08/2022
Last updated:	09/08/2022

VIBASys IDs: sample 51435, genome 51436, sequence viba\_51437, sequencing info 51438

#### Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_51429	ETH/11/2020	bovine	99.7	0	O	EA-3		
viba_51425	ETH/10/2020	bovine	99.7	0	O	EA-3		
viba_51453	ETH/2/2021	bovine	99.7	0	O	EA-3		
viba_51445	ETH/17/2020	bovine	99.7	0	O	EA-3		
viba_51409	ETH/29/2019	bovine	99.7	0	O	EA-3		
viba_47690	BAR/18/2021	cattle	99.5	0	O	EA-3		
viba_47686	BAR/17/2021	cattle	99.5	0	O	EA-3		
viba_47694	BAR/20/2021	cattle	99.4	0	O	EA-3		
viba_51461	ETH/5/2021	bovine	99.4	0	O	EA-3		
viba_51441	ETH/16/2020	bovine	99.4	0	O	EA-3		

#### 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_854	ETH/1/2007	cattle	91.2	0	O	EA-3		
viba_116	SUD/2/86	bovine	89.7	0	O	EA-3		
viba_408	ETH/3/2004	cattle	89.1	0	O	EA-3		
viba_30238	MUR/19/2016	cattle	86.9	0	O	ME-SA	Ind-2001	e
viba_285	UKG/35/2001	porcine	86.4	0	O	ME-SA	PanAsia	
viba_617	IND/53/79	bovine	86.4	0	O	ME-SA		
viba_74	KEN/5/2002	bovine	86.3	0	O	EA-2		
viba_850	NEP/1/2015	cattle	86.2	1	O	ME-SA	PanAsia-2	KAT-15
viba_766	IRN/31/2009	cattle	86.1	0	O	ME-SA	PanAsia-2	FAR-09
viba_705	KUW/3/97	bovine	86.1	0	O	ME-SA	Ind-2001	a

Virus sample name:	ETH/16/2020
Sender reference:	50299
Location of origin:	Hankole, East Shoa, Oromia
Country of origin:	Ethiopia
Date of collection:	15/12/2020
Host species:	bovine
Serotype:	O
Topotype:	EA-3
Lineage:	
Sublineage:	
Sequence length:	633
Ambiguities:	0
Material submitted for sequencing:	WRL-LFBK1
Harvest date of material:	08/07/2022
Primers:	O-1C244F/EUR-2B52R; FMD-3161F/FMD-4303R
Received for sequencing:	05/08/2022
Created:	09/08/2022
Last updated:	09/08/2022
VIBASys IDs: sample 51439, genome 51440, sequence viba_51441, sequencing info 51442	

#### Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_51445	ETH/17/2020	bovine	99.7	0	O	EA-3		
viba_51409	ETH/29/2019	bovine	99.7	0	O	EA-3		
viba_51437	ETH/15/2020	bovine	99.4	0	O	EA-3		
viba_51429	ETH/11/2020	bovine	99.4	0	O	EA-3		
viba_51425	ETH/10/2020	bovine	99.4	0	O	EA-3		
viba_51453	ETH/2/2021	bovine	99.4	0	O	EA-3		
viba_47690	BAR/18/2021	cattle	99.2	0	O	EA-3		
viba_47686	BAR/17/2021	cattle	99.2	0	O	EA-3		
viba_47694	BAR/20/2021	cattle	99.1	0	O	EA-3		
viba_51461	ETH/5/2021	bovine	99.1	0	O	EA-3		

#### 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_854	ETH/1/2007	cattle	91.2	0	O	EA-3		
viba_116	SUD/2/86	bovine	89.7	0	O	EA-3		
viba_408	ETH/3/2004	cattle	89.1	0	O	EA-3		
viba_30238	MUR/19/2016	cattle	86.8	0	O	ME-SA	Ind-2001	e
viba_285	UKG/35/2001	porcine	86.6	0	O	ME-SA	PanAsia	
viba_617	IND/53/79	bovine	86.3	0	O	ME-SA		
viba_850	NEP/1/2015	cattle	86.3	1	O	ME-SA	PanAsia-2	KAT-15
viba_650	IRN/8/2005	ovine	86.0	0	O	ME-SA	PanAsia-2	
viba_766	IRN/31/2009	cattle	86.0	0	O	ME-SA	PanAsia-2	FAR-09
viba_74	KEN/5/2002	bovine	85.9	0	O	EA-2		

Virus sample name:	ETH/17/2020
Sender reference:	50300
Location of origin:	Hankole, East Shoa, Oromia
Country of origin:	Ethiopia
Date of collection:	15/12/2020
Host species:	bovine
Serotype:	O
Topotype:	EA-3
Lineage:	
Sublineage:	
Sequence length:	633
Ambiguities:	0
Material submitted for sequencing:	WRL-LFBK1
Harvest date of material:	09/07/2022
Primers:	O-1C244F/EUR-2B52R; FMD-3161F/FMD-4303R
Received for sequencing:	05/08/2022
Created:	09/08/2022
Last updated:	09/08/2022
VIBASys IDs: sample 51443, genome 51444, sequence viba_51445, sequencing info 51446	

#### Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_51409	ETH/29/2019	bovine	100.0	0	O	EA-3		
viba_51437	ETH/15/2020	bovine	99.7	0	O	EA-3		
viba_51429	ETH/11/2020	bovine	99.7	0	O	EA-3		
viba_51425	ETH/10/2020	bovine	99.7	0	O	EA-3		
viba_51441	ETH/16/2020	bovine	99.7	0	O	EA-3		
viba_51453	ETH/2/2021	bovine	99.7	0	O	EA-3		
viba_47690	BAR/18/2021	cattle	99.5	0	O	EA-3		
viba_47686	BAR/17/2021	cattle	99.5	0	O	EA-3		
viba_47694	BAR/20/2021	cattle	99.4	0	O	EA-3		
viba_51461	ETH/5/2021	bovine	99.4	0	O	EA-3		

#### 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_854	ETH/1/2007	cattle	91.5	0	O	EA-3		
viba_116	SUD/2/86	bovine	90.0	0	O	EA-3		
viba_408	ETH/3/2004	cattle	89.4	0	O	EA-3		
viba_30238	MUR/19/2016	cattle	86.9	0	O	ME-SA	Ind-2001	e
viba_285	UKG/35/2001	porcine	86.8	0	O	ME-SA	PanAsia	
viba_850	NEP/1/2015	cattle	86.5	1	O	ME-SA	PanAsia-2	KAT-15
viba_617	IND/53/79	bovine	86.4	0	O	ME-SA		
viba_650	IRN/8/2005	ovine	86.1	0	O	ME-SA	PanAsia-2	
viba_766	IRN/31/2009	cattle	86.1	0	O	ME-SA	PanAsia-2	FAR-09
viba_74	KEN/5/2002	bovine	86.1	0	O	EA-2		

Virus sample name:	ETH/1/2021
Sender reference:	1556
Location of origin:	Chanfer, West Gojam, Amhara
Country of origin:	Ethiopia
Date of collection:	22/01/2021
Host species:	bovine
Serotype:	O
Topotype:	EA-3
Lineage:	
Sublineage:	
Sequence length:	633
Ambiguities:	0
Material submitted for sequencing:	WRL-LFBK2
Harvest date of material:	12/07/2022
Primers:	O-1C244F/EUR-2B52R; FMD-3161F/FMD-4303R
Received for sequencing:	05/08/2022
Created:	09/08/2022
Last updated:	09/08/2022

VIBASys IDs: sample 51447, genome 51448, sequence viba\_51449, sequencing info 51450

### Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_35493	Ismailia 13/Egy/2016		97.0	0	O	EA-3		
viba_35489	Ismailia 12/Egy/2016		97.0	0	O	EA-3		
viba_29582	EGY/13/2015	cattle	96.8	0	O	EA-3		
viba_29606	EGY/9/2016	cattle	96.8	0	O	EA-3		
viba_29622	EGY/14/2016	cattle	96.8	0	O	EA-3		
viba_39505	Egypt/54/2016	cattle	96.8	0	O	EA-3		
viba_30429	Ismailia 11/Egy/2016	cattle	96.8	0	O	EA-3		
viba_30405	Giza 2/Egy/2016	cattle	96.8	0	O	EA-3		
viba_39501	Egypt/35/2016	cattle	96.7	0	O	EA-3		
viba_39513	Egy/Dakahlia/2017	water buffalo	96.7	0	O	EA-3		

### 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_116	SUD/2/86	bovine	88.6	0	O	EA-3		
viba_854	ETH/1/2007	cattle	85.3	0	O	EA-3		
viba_408	ETH/3/2004	cattle	84.8	0	O	EA-3		
viba_285	UKG/35/2001	porcine	84.4	0	O	ME-SA	PanAsia	
viba_850	NEP/1/2015	cattle	84.3	1	O	ME-SA	PanAsia-2	KAT-15
viba_705	KUW/3/97	bovine	84.3	0	O	ME-SA	Ind-2001	a
viba_617	IND/53/79	bovine	84.2	0	O	ME-SA		
viba_354	PAK/16/2010	cattle	84.1	0	O	ME-SA	PanAsia-2	PUN-10
viba_221	MAL/1/98		84.0	0	O	EA-2		
viba_85	UGA/3/2002		83.9	0	O	EA-2		



Virus sample name:	ETH/2/2021
Sender reference:	4349
Location of origin:	Damote Weyde, Wolayita, SNNPR
Country of origin:	Ethiopia
Date of collection:	21/05/2021
Host species:	bovine
Serotype:	O
Topotype:	EA-3
Lineage:	
Sublineage:	
Sequence length:	633
Ambiguities:	0
Material submitted for sequencing:	WRL-LFBK1
Harvest date of material:	10/07/2022
Primers:	O-1C244F/EUR-2B52R; FMD-3161F/FMD-4303R
Received for sequencing:	05/08/2022
Created:	09/08/2022
Last updated:	09/08/2022

VIBASys IDs: sample 51451, genome 51452, sequence viba\_51453, sequencing info 51454

#### Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_51437	ETH/15/2020	bovine	99.7	0	O	EA-3		
viba_51429	ETH/11/2020	bovine	99.7	0	O	EA-3		
viba_51425	ETH/10/2020	bovine	99.7	0	O	EA-3		
viba_51445	ETH/17/2020	bovine	99.7	0	O	EA-3		
viba_51409	ETH/29/2019	bovine	99.7	0	O	EA-3		
viba_47690	BAR/18/2021	cattle	99.5	0	O	EA-3		
viba_47686	BAR/17/2021	cattle	99.5	0	O	EA-3		
viba_47694	BAR/20/2021	cattle	99.4	0	O	EA-3		
viba_51461	ETH/5/2021	bovine	99.4	0	O	EA-3		
viba_51441	ETH/16/2020	bovine	99.4	0	O	EA-3		

#### 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_854	ETH/1/2007	cattle	91.2	0	O	EA-3		
viba_116	SUD/2/86	bovine	89.7	0	O	EA-3		
viba_408	ETH/3/2004	cattle	89.1	0	O	EA-3		
viba_30238	MUR/19/2016	cattle	86.8	0	O	ME-SA	Ind-2001	e
viba_285	UKG/35/2001	porcine	86.6	0	O	ME-SA	PanAsia	
viba_617	IND/53/79	bovine	86.3	0	O	ME-SA		
viba_850	NEP/1/2015	cattle	86.3	1	O	ME-SA	PanAsia-2	KAT-15
viba_705	KUW/3/97	bovine	86.3	0	O	ME-SA	Ind-2001	a
viba_74	KEN/5/2002	bovine	86.1	0	O	EA-2		
viba_650	IRN/8/2005	ovine	86.0	0	O	ME-SA	PanAsia-2	

Virus sample name:	ETH/4/2021
Sender reference:	36364
Location of origin:	Wereda 09, Bole, Addis Ababa
Country of origin:	Ethiopia
Date of collection:	21/09/2021
Host species:	bovine
Serotype:	O
Topotype:	EA-3
Lineage:	
Sublineage:	
Sequence length:	633
Ambiguities:	0
Material submitted for sequencing:	WRL-LFBK1
Harvest date of material:	06/07/2022
Primers:	O-1C244F/EUR-2B52R; FMD-3161F/FMD-4303R
Received for sequencing:	05/08/2022
Created:	09/08/2022
Last updated:	09/08/2022
VIBASys IDs: sample 51455, genome 51456, sequence viba_51457, sequencing info 51458	

#### Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_51461	ETH/5/2021	bovine	100.0	0	O	EA-3		
viba_51437	ETH/15/2020	bovine	99.4	0	O	EA-3		
viba_51429	ETH/11/2020	bovine	99.4	0	O	EA-3		
viba_51425	ETH/10/2020	bovine	99.4	0	O	EA-3		
viba_51453	ETH/2/2021	bovine	99.4	0	O	EA-3		
viba_51445	ETH/17/2020	bovine	99.4	0	O	EA-3		
viba_51409	ETH/29/2019	bovine	99.4	0	O	EA-3		
viba_47690	BAR/18/2021	cattle	99.2	0	O	EA-3		
viba_47686	BAR/17/2021	cattle	99.2	0	O	EA-3		
viba_47694	BAR/20/2021	cattle	99.1	0	O	EA-3		

#### 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_854	ETH/1/2007	cattle	91.2	0	O	EA-3		
viba_116	SUD/2/86	bovine	90.0	0	O	EA-3		
viba_408	ETH/3/2004	cattle	89.4	0	O	EA-3		
viba_30238	MUR/19/2016	cattle	87.1	0	O	ME-SA	Ind-2001	e
viba_285	UKG/35/2001	porcine	86.9	0	O	ME-SA	PanAsia	
viba_850	NEP/1/2015	cattle	86.7	1	O	ME-SA	PanAsia-2	KAT-15
viba_617	IND/53/79	bovine	86.6	0	O	ME-SA		
viba_705	KUW/3/97	bovine	86.6	0	O	ME-SA	Ind-2001	a
viba_650	IRN/8/2005	ovine	86.3	0	O	ME-SA	PanAsia-2	
viba_766	IRN/31/2009	cattle	86.3	0	O	ME-SA	PanAsia-2	FAR-09

Virus sample name:	ETH/5/2021
Sender reference:	36367
Location of origin:	Wereda 09, Bole, Addis Ababa
Country of origin:	Ethiopia
Date of collection:	21/09/2021
Host species:	bovine
Serotype:	O
Topotype:	EA-3
Lineage:	
Sublineage:	
Sequence length:	633
Ambiguities:	0
Material submitted for sequencing:	WRL-LFBK1
Harvest date of material:	06/07/2022
Primers:	O-1C244F/EUR-2B52R; FMD-3161F/FMD-4303R
Received for sequencing:	05/08/2022
Created:	09/08/2022
Last updated:	09/08/2022
VIBASys IDs: sample 51459, genome 51460, sequence viba_51461, sequencing info 51462	

#### Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_51457	ETH/4/2021	bovine	100.0	0	O	EA-3		
viba_51437	ETH/15/2020	bovine	99.4	0	O	EA-3		
viba_51429	ETH/11/2020	bovine	99.4	0	O	EA-3		
viba_51425	ETH/10/2020	bovine	99.4	0	O	EA-3		
viba_51453	ETH/2/2021	bovine	99.4	0	O	EA-3		
viba_51445	ETH/17/2020	bovine	99.4	0	O	EA-3		
viba_51409	ETH/29/2019	bovine	99.4	0	O	EA-3		
viba_47690	BAR/18/2021	cattle	99.2	0	O	EA-3		
viba_47686	BAR/17/2021	cattle	99.2	0	O	EA-3		
viba_47694	BAR/20/2021	cattle	99.1	0	O	EA-3		

#### 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_854	ETH/1/2007	cattle	91.2	0	O	EA-3		
viba_116	SUD/2/86	bovine	90.0	0	O	EA-3		
viba_408	ETH/3/2004	cattle	89.4	0	O	EA-3		
viba_30238	MUR/19/2016	cattle	87.1	0	O	ME-SA	Ind-2001	e
viba_285	UKG/35/2001	porcine	86.9	0	O	ME-SA	PanAsia	
viba_850	NEP/1/2015	cattle	86.7	1	O	ME-SA	PanAsia-2	KAT-15
viba_617	IND/53/79	bovine	86.6	0	O	ME-SA		
viba_705	KUW/3/97	bovine	86.6	0	O	ME-SA	Ind-2001	a
viba_650	IRN/8/2005	ovine	86.3	0	O	ME-SA	PanAsia-2	
viba_766	IRN/31/2009	cattle	86.3	0	O	ME-SA	PanAsia-2	FAR-09

Virus sample name:	ETH/5/2022
Sender reference:	10975
Location of origin:	Debre Libanose, North Shoa, Oromia
Country of origin:	Ethiopia
Date of collection:	30/03/2022
Host species:	bovine
Serotype:	O
Topotype:	EA-3
Lineage:	
Sublineage:	
Sequence length:	633
Ambiguities:	0
Material submitted for sequencing:	WRL-LFBK1
Harvest date of material:	07/07/2022
Primers:	O-1C244F/EUR-2B52R; FMD-3161F/FMD-4303R
Received for sequencing:	05/08/2022
Created:	09/08/2022
Last updated:	09/08/2022

VIBASys IDs: sample 51463, genome 51464, sequence viba\_51465, sequencing info 51466

### Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_36234	ETH/16/2018	cattle	100.0	0	O	EA-3		
viba_41497	ETH/72/2018	cattle	99.8	0	O	EA-3		
viba_41501	ETH/73/2018	cattle	99.7	0	O	EA-3		
viba_33527	ETH/5/2017	cattle	99.2	0	O	EA-3		
viba_33519	ETH/3/2017	cattle	99.2	0	O	EA-3		
viba_33523	ETH/4/2017	cattle	99.2	0	O	EA-3		
viba_33515	ETH/2/2017	cattle	98.9	0	O	EA-3		
viba_37029	SUD/1/2016	cattle	98.7	0	O	EA-3		
viba_34239	EGY/33/2017	cattle	98.6	0	O	EA-3		
viba_34183	EGY/11/2017	water buffalo	98.4	0	O	EA-3		

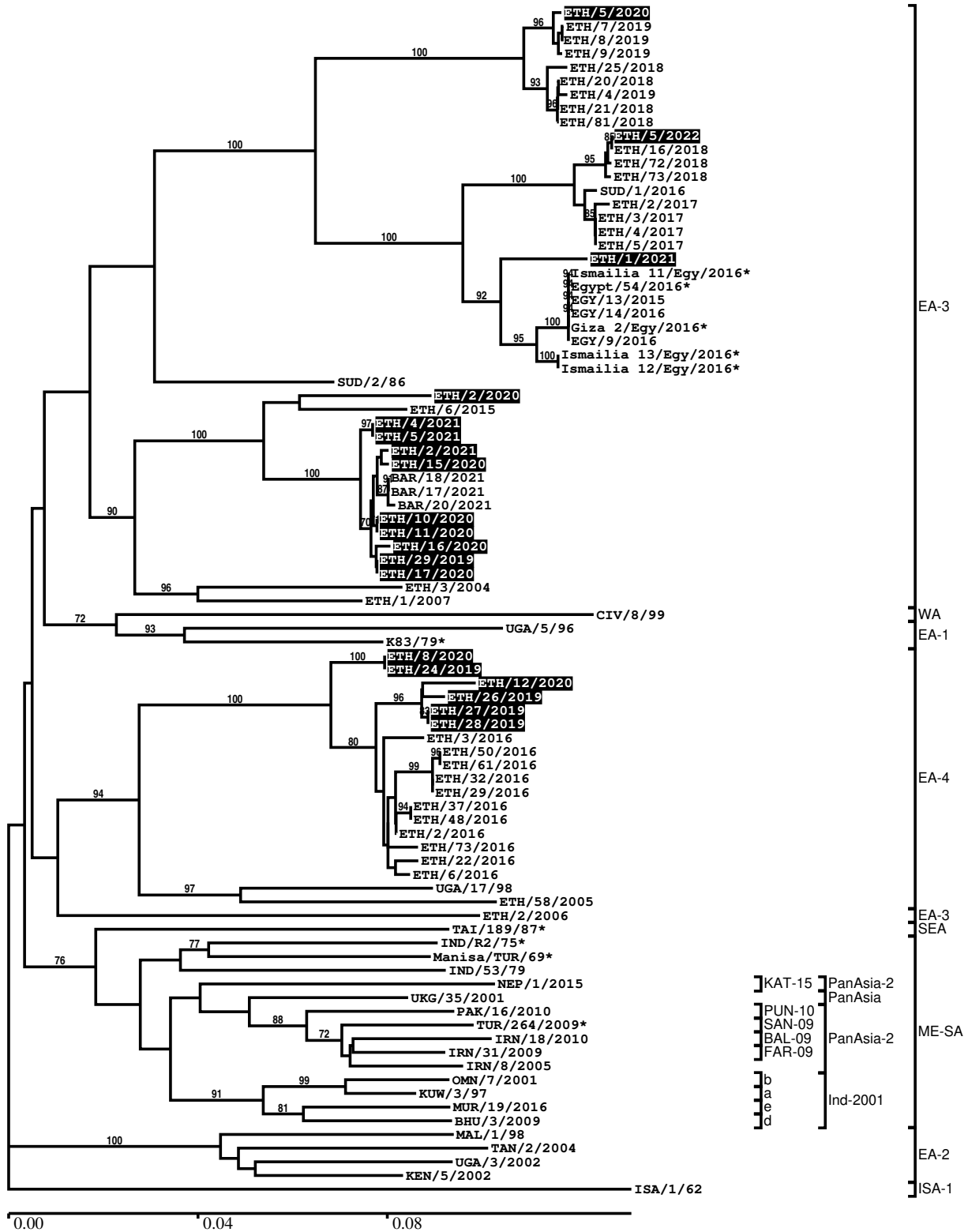
### Most Closely Related Prototype Sequences

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

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_116	SUD/2/86	bovine	87.8	0	O	EA-3		
viba_854	ETH/1/2007	cattle	85.0	0	O	EA-3		
viba_408	ETH/3/2004	cattle	84.6	0	O	EA-3		
viba_617	IND/53/79	bovine	84.1	0	O	ME-SA		
viba_263	TAN/2/2004	bovine	83.9	0	O	EA-2		
viba_85	UGA/3/2002		83.9	0	O	EA-2		
viba_221	MAL/1/98		83.9	0	O	EA-2		
viba_285	UKG/35/2001	porcine	83.8	0	O	ME-SA	PanAsia	
viba_302	CIV/8/99	bovine	83.5	0	O	WA		
viba_850	NEP/1/2015	cattle	83.2	1	O	ME-SA	PanAsia-2	KAT-15

Report on FMDV O in Ethiopia in 2019, 2020, 2021, 2022

Batch: WRLFMD/2022/000012



\*, not a WRLFMD Reference Number

## Analysis Parameters

VP1 subsequence extractor: vp1\_O  
 Query sequence set: WRLFMD/2022/000012-Ethiopia-O (19 sequences)  
 Sequence database set: allseqs\_O (5712 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: 27  
 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
ETH/5/2020	n/a	bovine	WRLFMD	Ethiopia	EA-3
ETH/7/2019	MN987486	cattle	WRLFMD	Ethiopia	EA-3
ETH/8/2019	MN987487	cattle	WRLFMD	Ethiopia	EA-3
ETH/9/2019	MN987488	cattle	WRLFMD	Ethiopia	EA-3
ETH/25/2018	MN987474	cattle	WRLFMD	Ethiopia	EA-3
ETH/20/2018	MN987469	cattle	WRLFMD	Ethiopia	EA-3
ETH/4/2019	MN987483	cattle	WRLFMD	Ethiopia	EA-3
ETH/21/2018	MN987470	cattle	WRLFMD	Ethiopia	EA-3
ETH/81/2018	MN987479	cattle	WRLFMD	Ethiopia	EA-3
ETH/5/2022	n/a	bovine	WRLFMD	Ethiopia	EA-3
ETH/16/2018	MN987466	cattle	WRLFMD	Ethiopia	EA-3
ETH/72/2018	MN987477	cattle	WRLFMD	Ethiopia	EA-3
ETH/73/2018	MN987478	cattle	WRLFMD	Ethiopia	EA-3
SUD/1/2016	MK422563	cattle	WRLFMD	Sudan	EA-3
ETH/2/2017	MN987452	cattle	WRLFMD	Ethiopia	EA-3
ETH/3/2017	MN987453	cattle	WRLFMD	Ethiopia	EA-3
ETH/4/2017	MN987454	cattle	WRLFMD	Ethiopia	EA-3
ETH/5/2017	MN987455	cattle	WRLFMD	Ethiopia	EA-3
ETH/1/2021	n/a	bovine	WRLFMD	Ethiopia	EA-3
Ismailia 11/Egy/2016*	KX447138	cattle	Suez Canal Univ	Egypt	EA-3
Egypt/54/2016*	MG925051	cattle	NRC-CAIRO	Egypt	EA-3
EGY/13/2015	n/a	cattle	WRLFMD	Egypt	EA-3
EGY/14/2016	n/a	cattle	WRLFMD	Egypt	EA-3
Giza 2/Egy/2016*	KX447132	cattle	Suez Canal Univ	Egypt	EA-3
EGY/9/2016	n/a	cattle	WRLFMD	Egypt	EA-3
Ismailia 13/Egy/2016*	MF322679	n/a	MEVAC	Egypt	EA-3
Ismailia 12/Egy/2016*	MF322678	n/a	MEVAC	Egypt	EA-3
SUD/2/86	DQ165075	bovine	WRLFMD	Sudan	EA-3
ETH/2/2020	n/a	bovine	WRLFMD	Ethiopia	EA-3
ETH/6/2015	MN987423	cattle	WRLFMD	Ethiopia	EA-3
ETH/4/2021	n/a	bovine	WRLFMD	Ethiopia	EA-3
ETH/5/2021	n/a	bovine	WRLFMD	Ethiopia	EA-3
ETH/2/2021	n/a	bovine	WRLFMD	Ethiopia	EA-3
ETH/15/2020	n/a	bovine	WRLFMD	Ethiopia	EA-3
BAR/18/2021	n/a	cattle	WRLFMD	Bahrain	EA-3
BAR/17/2021	n/a	cattle	WRLFMD	Bahrain	EA-3

*continued on next page*

label	accession	host(s)	lab	country	taxonomic information
BAR/20/2021	n/a	cattle	WRLFMD	Bahrain	EA-3
ETH/10/2020	n/a	bovine	WRLFMD	Ethiopia	EA-3
ETH/11/2020	n/a	bovine	WRLFMD	Ethiopia	EA-3
ETH/16/2020	n/a	bovine	WRLFMD	Ethiopia	EA-3
ETH/29/2019	n/a	bovine	WRLFMD	Ethiopia	EA-3
ETH/17/2020	n/a	bovine	WRLFMD	Ethiopia	EA-3
ETH/3/2004	FJ798109	cattle	WRLFMD	Ethiopia	EA-3
ETH/1/2007	FJ798137	cattle	WRLFMD	Ethiopia	EA-3
CIV/8/99	AJ303485	bovine	WRLFMD	Cote d'Ivoire	WA
UGA/5/96	AJ296327	bovine	WRLFMD	Uganda	EA-1
K83/79*	AJ303511	n/a	WRLFMD	Kenya	EA-1
ETH/8/2020	n/a	bovine	WRLFMD	Ethiopia	EA-4
ETH/24/2019	n/a	bovine	WRLFMD	Ethiopia	EA-4
ETH/12/2020	n/a	bovine	WRLFMD	Ethiopia	EA-4
ETH/26/2019	n/a	bovine	WRLFMD	Ethiopia	EA-4
ETH/27/2019	n/a	bovine	WRLFMD	Ethiopia	EA-4
ETH/28/2019	n/a	bovine	WRLFMD	Ethiopia	EA-4
ETH/3/2016	MN987426	cattle	WRLFMD	Ethiopia	EA-4
ETH/50/2016	MN987448	bovine	WRLFMD	Ethiopia	EA-4
ETH/61/2016	MN987450	bovine	WRLFMD	Ethiopia	EA-4
ETH/32/2016	MN987441	bovine	WRLFMD	Ethiopia	EA-4
ETH/29/2016	MN987439	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/73/2016	MN987451	bovine	WRLFMD	Ethiopia	EA-4
ETH/22/2016	MN987437	cattle	WRLFMD	Ethiopia	EA-4
ETH/6/2016	MN987428	cattle	WRLFMD	Ethiopia	EA-4
UGA/17/98	HM211075	n/a	WRLFMD	Uganda	EA-4
ETH/58/2005	FJ798141	bovine	WRLFMD	Ethiopia	EA-4
ETH/2/2006	FJ798127	bovine	WRLFMD	Ethiopia	EA-3
TAI/189/87*	KY091288	bovine	TRRL	Thailand	SEA
IND/R2/75*	AF204276	n/a	PD-FMD	India	ME-SA
Manisa/TUR/69*	AY593823	n/a	PIADC	Turkey	ME-SA
IND/53/79	AF292107	bovine	PD-FMD	India	ME-SA
NEP/1/2015	MN276045	cattle	WRLFMD	Nepal	ME-SA/PanAsia-2/KAT-15
UKG/35/2001	AJ539141	porcine	PIADC	United Kingdom	ME-SA/PanAsia
PAK/16/2010	KY091285	cattle	WRLFMD	Pakistan	ME-SA/PanAsia-2/PUN-10
TUR/264/2009*	n/a	n/a	FMDI-Ankara	Turkey	ME-SA/PanAsia-2/SAN-09
IRN/18/2010	KY091283	cattle	WRLFMD	Iran	ME-SA/PanAsia-2/BAL-09
IRN/31/2009	KY091284	cattle	WRLFMD	Iran	ME-SA/PanAsia-2/FAR-09
IRN/8/2005	KY091281	ovine	WRLFMD	Iran	ME-SA/PanAsia-2
OMN/7/2001	DQ164941	bovine	WRLFMD	Oman	ME-SA/Ind-2001/b
KUW/3/97	DQ164904	bovine	WRLFMD	Kuwait	ME-SA/Ind-2001/a
MUR/19/2016	MG972510	cattle	WRLFMD	Mauritius	ME-SA/Ind-2001/e
BHU/3/2009	KM921814	cattle	WRLFMD	Bhutan	ME-SA/Ind-2001/d
MAL/1/98	DQ165074	n/a	WRLFMD	Malawi	EA-2
TAN/2/2004	KF561679	bovine	WRLFMD	Tanzania	EA-2
UGA/3/2002	DQ165077	n/a	WRLFMD	Uganda	EA-2
KEN/5/2002	DQ165073	bovine	WRLFMD	Kenya	EA-2
ISA/1/62	AJ303500	n/a	WRLFMD	Indonesia	ISA-1

\*, not a WRLFMD Reference Number

n/a, not available