

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

Genotyping Report

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



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

email: reporting@pirbright.ac.uk

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Virus sample name:	ETH/21/2019
Sender reference:	90
Location of origin:	Bero, South Omo, SNNPR
Country of origin:	Ethiopia
Date of collection:	09/04/2019
Host species:	bovine
Serotype:	A
Topotype:	AFRICA
Lineage:	G-IV
Sublineage:	
Sequence length:	633
Ambiguities:	0
Material submitted for sequencing:	WRL-LFBK1
Harvest date of material:	17/06/2022
Primers:	A-1C562F/EUR-2B52R; FMD-3161F/FMD-4303R
Received for sequencing:	05/08/2022
Created:	09/08/2022
Last updated:	09/08/2022

VIBASys IDs: sample 51467, genome 51468, sequence viba_51469, sequencing info 51470

Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_41469	ETH/3/2019	cattle	100.0	0	A	AFRICA	G-IV	
viba_51485	ETH/1/2020	bovine	100.0	0	A	AFRICA	G-IV	
viba_41481	ETH/13/2019	cattle	100.0	0	A	AFRICA	G-IV	
viba_41461	ETH/1/2019	cattle	100.0	0	A	AFRICA	G-IV	
viba_41477	ETH/12/2019	cattle	100.0	0	A	AFRICA	G-IV	
viba_41473	ETH/11/2019	cattle	100.0	0	A	AFRICA	G-IV	
viba_41465	ETH/2/2019	cattle	100.0	0	A	AFRICA	G-IV	
viba_41453	ETH/86/2018	cattle	99.8	0	A	AFRICA	G-IV	
viba_40399	ETH/52/2018	cattle	99.7	0	A	AFRICA	G-IV	
viba_40431	ETH/69/2018	cattle	99.7	0	A	AFRICA	G-IV	

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_178	SUD/3/77		84.5	0	A	AFRICA	G-IV	
viba_347	KEN/42/66		84.3	0	A	AFRICA	G-I	
viba_535	NGR/2/73	bovine	84.2	0	A	AFRICA	G-V	
viba_785	KEN/3/64		83.7	0	A	AFRICA	G-III	
viba_609	GHA/16/73	bovine	83.3	0	A	AFRICA	G-VI	
viba_699	UKG/119/32		82.6	0	A	EURO-SA	A12	
viba_688	EGY/1/72	bovine	81.8	0	A	AFRICA	G-II	
viba_173	UGA/13/66	bovine	81.5	0	A	AFRICA	G-VII	
viba_435	Allier/FRA/60		81.2	0	A	EURO-SA	A5	
viba_98	Alem/ARG/81		81.1	0	A	EURO-SA	A81	

Virus sample name:	ETH/25/2019
Sender reference:	33490
Location of origin:	Lume, East Shoa, Oromia
Country of origin:	Ethiopia
Date of collection:	26/08/2019
Host species:	bovine
Serotype:	A
Topotype:	AFRICA
Lineage:	G-IV
Sublineage:	
Sequence length:	633
Ambiguities:	0
Material submitted for sequencing:	WRL-LFBK1
Harvest date of material:	21/06/2022
Primers:	A-1C562F/EUR-2B52R; FMD-3161F/FMD-4303R
Received for sequencing:	05/08/2022
Created:	09/08/2022
Last updated:	09/08/2022
VIBASys IDs: sample 51471, genome 51472, sequence viba_51473, sequencing info 51474	

Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_51481	ETH/34/2019	bovine	100.0	0	A	AFRICA	G-IV	
viba_51493	ETH/13/2020	bovine	97.5	0	A	AFRICA	G-IV	
viba_51497	ETH/14/2020	bovine	97.5	0	A	AFRICA	G-IV	
viba_30346	Ismailia 1/Egy/2016	cattle	94.2	0	A	AFRICA	G-IV	
viba_34155	EGY/19/2016	cattle	94.0	0	A	AFRICA	G-IV	
viba_39545	Egy/Faiyum/2016	cattle	94.0	0	A	AFRICA	G-IV	
viba_30358	Ismailia 4/Egy/2016	cattle	93.8	0	A	AFRICA	G-IV	
viba_30350	Ismailia 2/Egy/2016	cattle	93.8	0	A	AFRICA	G-IV	
viba_29562	EGY/3/2016	cattle	93.8	0	A	AFRICA	G-IV	
viba_29558	EGY/8/2015	cattle	93.8	0	A	AFRICA	G-IV	

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_178	SUD/3/77		83.9	0	A	AFRICA	G-IV	
viba_535	NGR/2/73	bovine	83.0	0	A	AFRICA	G-V	
viba_347	KEN/42/66		82.9	0	A	AFRICA	G-I	
viba_173	UGA/13/66	bovine	81.4	0	A	AFRICA	G-VII	
viba_688	EGY/1/72	bovine	81.2	0	A	AFRICA	G-II	
viba_609	GHA/16/73	bovine	81.0	0	A	AFRICA	G-VI	
viba_475	IRN/22/99		80.6	0	A	ASIA	Iran-99	
viba_785	KEN/3/64		80.4	0	A	AFRICA	G-III	
viba_677	IRQ/24/64	bovine	79.8	0	A	ASIA	A22	
viba_435	Allier/FRA/60		79.4	0	A	EURO-SA	A5	

Virus sample name:	ETH/30/2019
Sender reference:	34486 (1)
Location of origin:	Samere, Southern Zone, Tigray
Country of origin:	Ethiopia
Date of collection:	22/11/2019
Host species:	bovine
Serotype:	A
Topotype:	AFRICA
Lineage:	G-IV
Sublineage:	
Sequence length:	633
Ambiguities:	0
Material submitted for sequencing:	WRL-LFBK1
Harvest date of material:	18/06/2022
Primers:	A-1C562F/EUR-2B52R; FMD-3161F/FMD-4303R
Received for sequencing:	05/08/2022
Created:	09/08/2022
Last updated:	09/08/2022
VIBASys IDs: sample 51475, genome 51476, sequence viba_51477, sequencing info 51478	

Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_30358	Ismailia 4/Egy/2016	cattle	96.7	0	A	AFRICA	G-IV	
viba_30350	Ismailia 2/Egy/2016	cattle	96.7	0	A	AFRICA	G-IV	
viba_29562	EGY/3/2016	cattle	96.7	0	A	AFRICA	G-IV	
viba_29558	EGY/8/2015	cattle	96.7	0	A	AFRICA	G-IV	
viba_30362	Giza 1/Egy/2016	cattle	96.7	0	A	AFRICA	G-IV	
viba_30354	Ismailia 3/Egy/2016	cattle	96.7	0	A	AFRICA	G-IV	
viba_30346	Ismailia 1/Egy/2016	cattle	96.5	0	A	AFRICA	G-IV	
viba_34155	EGY/19/2016	cattle	96.5	0	A	AFRICA	G-IV	
viba_39545	Egy/Faiyum/2016	cattle	96.5	0	A	AFRICA	G-IV	
viba_36990	SUD/9/2018	cattle	96.4	0	A	AFRICA	G-IV	

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_178	SUD/3/77		83.7	0	A	AFRICA	G-IV	
viba_347	KEN/42/66		83.0	0	A	AFRICA	G-I	
viba_535	NGR/2/73	bovine	82.4	0	A	AFRICA	G-V	
viba_609	GHA/16/73	bovine	81.0	0	A	AFRICA	G-VI	
viba_688	EGY/1/72	bovine	80.6	0	A	AFRICA	G-II	
viba_173	UGA/13/66	bovine	80.3	0	A	AFRICA	G-VII	
viba_475	IRN/22/99		80.1	0	A	ASIA	Iran-99	
viba_785	KEN/3/64		80.0	0	A	AFRICA	G-III	
viba_699	UKG/119/32		79.6	0	A	EURO-SA	A12	
viba_435	Allier/FRA/60		79.1	0	A	EURO-SA	A5	

Virus sample name:	ETH/34/2019
Sender reference:	35490
Location of origin:	Sebata, North South Shoa, Oromia
Country of origin:	Ethiopia
Date of collection:	20/12/2019
Host species:	bovine
Serotype:	A
Topotype:	AFRICA
Lineage:	G-IV
Sublineage:	
Sequence length:	633
Ambiguities:	0
Material submitted for sequencing:	WRL-LFBK1
Harvest date of material:	18/06/2022
Primers:	A-1C562F/EUR-2B52R; FMD-3161F/FMD-4303R
Received for sequencing:	05/08/2022
Created:	09/08/2022
Last updated:	09/08/2022
VIBASys IDs: sample 51479, genome 51480, sequence viba_51481, sequencing info 51482	

Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_51473	ETH/25/2019	bovine	100.0	0	A	AFRICA	G-IV	
viba_51493	ETH/13/2020	bovine	97.5	0	A	AFRICA	G-IV	
viba_51497	ETH/14/2020	bovine	97.5	0	A	AFRICA	G-IV	
viba_30346	Ismailia 1/Egy/2016	cattle	94.2	0	A	AFRICA	G-IV	
viba_34155	EGY/19/2016	cattle	94.0	0	A	AFRICA	G-IV	
viba_39545	Egy/Faiyum/2016	cattle	94.0	0	A	AFRICA	G-IV	
viba_30358	Ismailia 4/Egy/2016	cattle	93.8	0	A	AFRICA	G-IV	
viba_30350	Ismailia 2/Egy/2016	cattle	93.8	0	A	AFRICA	G-IV	
viba_29562	EGY/3/2016	cattle	93.8	0	A	AFRICA	G-IV	
viba_29558	EGY/8/2015	cattle	93.8	0	A	AFRICA	G-IV	

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_178	SUD/3/77		83.9	0	A	AFRICA	G-IV	
viba_535	NGR/2/73	bovine	83.0	0	A	AFRICA	G-V	
viba_347	KEN/42/66		82.9	0	A	AFRICA	G-I	
viba_173	UGA/13/66	bovine	81.4	0	A	AFRICA	G-VII	
viba_688	EGY/1/72	bovine	81.2	0	A	AFRICA	G-II	
viba_609	GHA/16/73	bovine	81.0	0	A	AFRICA	G-VI	
viba_475	IRN/22/99		80.6	0	A	ASIA	Iran-99	
viba_785	KEN/3/64		80.4	0	A	AFRICA	G-III	
viba_677	IRQ/24/64	bovine	79.8	0	A	ASIA	A22	
viba_435	Allier/FRA/60		79.4	0	A	EURO-SA	A5	

Virus sample name:	ETH/1/2020
Sender reference:	4580
Location of origin:	Holeta, Finfine Special Zone, Oromia
Country of origin:	Ethiopia
Date of collection:	15/01/2020
Host species:	bovine
Serotype:	A
Topotype:	AFRICA
Lineage:	G-IV
Sublineage:	
Sequence length:	633
Ambiguities:	0
Material submitted for sequencing:	WRL-LFBK1
Harvest date of material:	21/06/2022
Primers:	A-1C562F/EUR-2B52R; FMD-3161F/FMD-4303R
Received for sequencing:	05/08/2022
Created:	09/08/2022
Last updated:	09/08/2022
VIBASys IDs: sample 51483, genome 51484, sequence viba_51485, sequencing info 51486	

Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_41469	ETH/3/2019	cattle	100.0	0	A	AFRICA	G-IV	
viba_41481	ETH/13/2019	cattle	100.0	0	A	AFRICA	G-IV	
viba_41461	ETH/1/2019	cattle	100.0	0	A	AFRICA	G-IV	
viba_51469	ETH/21/2019	bovine	100.0	0	A	AFRICA	G-IV	
viba_41477	ETH/12/2019	cattle	100.0	0	A	AFRICA	G-IV	
viba_41473	ETH/11/2019	cattle	100.0	0	A	AFRICA	G-IV	
viba_41465	ETH/2/2019	cattle	100.0	0	A	AFRICA	G-IV	
viba_41453	ETH/86/2018	cattle	99.8	0	A	AFRICA	G-IV	
viba_40399	ETH/52/2018	cattle	99.7	0	A	AFRICA	G-IV	
viba_40431	ETH/69/2018	cattle	99.7	0	A	AFRICA	G-IV	

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_178	SUD/3/77		84.5	0	A	AFRICA	G-IV	
viba_347	KEN/42/66		84.3	0	A	AFRICA	G-I	
viba_535	NGR/2/73	bovine	84.2	0	A	AFRICA	G-V	
viba_785	KEN/3/64		83.7	0	A	AFRICA	G-III	
viba_609	GHA/16/73	bovine	83.3	0	A	AFRICA	G-VI	
viba_699	UKG/119/32		82.6	0	A	EURO-SA	A12	
viba_688	EGY/1/72	bovine	81.8	0	A	AFRICA	G-II	
viba_173	UGA/13/66	bovine	81.5	0	A	AFRICA	G-VII	
viba_435	Allier/FRA/60		81.2	0	A	EURO-SA	A5	
viba_98	Alem/ARG/81		81.1	0	A	EURO-SA	A81	

Virus sample name:	ETH/9/2020
Sender reference:	21525
Location of origin:	Jima Genete, Horu Guduru, Oromia
Country of origin:	Ethiopia
Date of collection:	09/05/2020
Host species:	bovine
Serotype:	A
Topotype:	AFRICA
Lineage:	G-IV
Sublineage:	
Sequence length:	633
Ambiguities:	0
Material submitted for sequencing:	WRL-LFBK1
Harvest date of material:	22/06/2022
Primers:	A-1C562F/EUR-2B52R; FMD-3161F/FMD-4303R
Received for sequencing:	05/08/2022
Created:	09/08/2022
Last updated:	09/08/2022
VIBASys IDs: sample 51487, genome 51488, sequence viba_51489, sequencing info 51490	

Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_25918	ETH/19/2015	bovine	100.0	0	A	AFRICA	G-IV	
viba_30358	Ismailia 4/Egy/2016	cattle	97.6	0	A	AFRICA	G-IV	
viba_30350	Ismailia 2/Egy/2016	cattle	97.6	0	A	AFRICA	G-IV	
viba_29562	EGY/3/2016	cattle	97.6	0	A	AFRICA	G-IV	
viba_29558	EGY/8/2015	cattle	97.6	0	A	AFRICA	G-IV	
viba_30362	Giza 1/Egy/2016	cattle	97.6	0	A	AFRICA	G-IV	
viba_30354	Ismailia 3/Egy/2016	cattle	97.6	0	A	AFRICA	G-IV	
viba_30346	Ismailia 1/Egy/2016	cattle	97.5	0	A	AFRICA	G-IV	
viba_34155	EGY/19/2016	cattle	97.5	0	A	AFRICA	G-IV	
viba_39545	Egy/Faiyum/2016	cattle	97.5	0	A	AFRICA	G-IV	

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_178	SUD/3/77		85.2	0	A	AFRICA	G-IV	
viba_535	NGR/2/73	bovine	83.3	0	A	AFRICA	G-V	
viba_347	KEN/42/66		83.3	0	A	AFRICA	G-I	
viba_609	GHA/16/73	bovine	82.3	0	A	AFRICA	G-VI	
viba_688	EGY/1/72	bovine	82.1	0	A	AFRICA	G-II	
viba_785	KEN/3/64		82.0	0	A	AFRICA	G-III	
viba_173	UGA/13/66	bovine	80.3	0	A	AFRICA	G-VII	
viba_98	Alem/ARG/81		79.8	0	A	EURO-SA	A81	
viba_435	Allier/FRA/60		79.7	0	A	EURO-SA	A5	
viba_699	UKG/119/32		79.3	0	A	EURO-SA	A12	

Virus sample name:	ETH/13/2020
Sender reference:	13315
Location of origin:	Monesha, East Shoa, Oromia
Country of origin:	Ethiopia
Date of collection:	11/11/2020
Host species:	bovine
Serotype:	A
Topotype:	AFRICA
Lineage:	G-IV
Sublineage:	
Sequence length:	633
Ambiguities:	0
Material submitted for sequencing:	WRL-LFBK1
Harvest date of material:	06/07/2022
Primers:	A-1C562F/EUR-2B52R; FMD-3161F/FMD-4303R
Received for sequencing:	05/08/2022
Created:	09/08/2022
Last updated:	09/08/2022
VIBASys IDs: sample 51491, genome 51492, sequence viba_51493, sequencing info 51494	

Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_51497	ETH/14/2020	bovine	100.0	0	A	AFRICA	G-IV	
viba_51473	ETH/25/2019	bovine	97.5	0	A	AFRICA	G-IV	
viba_51481	ETH/34/2019	bovine	97.5	0	A	AFRICA	G-IV	
viba_30346	Ismailia 1/Egy/2016	cattle	94.2	0	A	AFRICA	G-IV	
viba_34155	EGY/19/2016	cattle	94.0	0	A	AFRICA	G-IV	
viba_39545	Egy/Faiyum/2016	cattle	94.0	0	A	AFRICA	G-IV	
viba_30358	Ismailia 4/Egy/2016	cattle	93.8	0	A	AFRICA	G-IV	
viba_30350	Ismailia 2/Egy/2016	cattle	93.8	0	A	AFRICA	G-IV	
viba_29562	EGY/3/2016	cattle	93.8	0	A	AFRICA	G-IV	
viba_29558	EGY/8/2015	cattle	93.8	0	A	AFRICA	G-IV	

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_178	SUD/3/77		84.0	0	A	AFRICA	G-IV	
viba_535	NGR/2/73	bovine	83.8	0	A	AFRICA	G-V	
viba_347	KEN/42/66		83.2	0	A	AFRICA	G-I	
viba_173	UGA/13/66	bovine	82.1	0	A	AFRICA	G-VII	
viba_609	GHA/16/73	bovine	81.3	0	A	AFRICA	G-VI	
viba_688	EGY/1/72	bovine	81.3	0	A	AFRICA	G-II	
viba_785	KEN/3/64		81.1	0	A	AFRICA	G-III	
viba_677	IRQ/24/64	bovine	80.3	0	A	ASIA	A22	
viba_475	IRN/22/99		79.9	0	A	ASIA	Iran-99	
viba_98	Alem/ARG/81		79.8	0	A	EURO-SA	A81	

Virus sample name:	ETH/14/2020
Sender reference:	13325
Location of origin:	Monesa, East Shoa, Oromia
Country of origin:	Ethiopia
Date of collection:	11/11/2020
Host species:	bovine
Serotype:	A
Topotype:	AFRICA
Lineage:	G-IV
Sublineage:	
Sequence length:	633
Ambiguities:	0
Material submitted for sequencing:	WRL-LFBK1
Harvest date of material:	08/07/2022
Primers:	A-1C562F/EUR-2B52R; FMD-3161F/FMD-4303R
Received for sequencing:	05/08/2022
Created:	09/08/2022
Last updated:	09/08/2022

VIBASys IDs: sample 51495, genome 51496, sequence viba_51497, sequencing info 51498

Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_51493	ETH/13/2020	bovine	100.0	0	A	AFRICA	G-IV	
viba_51473	ETH/25/2019	bovine	97.5	0	A	AFRICA	G-IV	
viba_51481	ETH/34/2019	bovine	97.5	0	A	AFRICA	G-IV	
viba_30346	Ismailia 1/Egy/2016	cattle	94.2	0	A	AFRICA	G-IV	
viba_34155	EGY/19/2016	cattle	94.0	0	A	AFRICA	G-IV	
viba_39545	Egy/Faiyum/2016	cattle	94.0	0	A	AFRICA	G-IV	
viba_30358	Ismailia 4/Egy/2016	cattle	93.8	0	A	AFRICA	G-IV	
viba_30350	Ismailia 2/Egy/2016	cattle	93.8	0	A	AFRICA	G-IV	
viba_29562	EGY/3/2016	cattle	93.8	0	A	AFRICA	G-IV	
viba_29558	EGY/8/2015	cattle	93.8	0	A	AFRICA	G-IV	

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_178	SUD/3/77		84.0	0	A	AFRICA	G-IV	
viba_535	NGR/2/73	bovine	83.8	0	A	AFRICA	G-V	
viba_347	KEN/42/66		83.2	0	A	AFRICA	G-I	
viba_173	UGA/13/66	bovine	82.1	0	A	AFRICA	G-VII	
viba_609	GHA/16/73	bovine	81.3	0	A	AFRICA	G-VI	
viba_688	EGY/1/72	bovine	81.3	0	A	AFRICA	G-II	
viba_785	KEN/3/64		81.1	0	A	AFRICA	G-III	
viba_677	IRQ/24/64	bovine	80.3	0	A	ASIA	A22	
viba_475	IRN/22/99		79.9	0	A	ASIA	Iran-99	
viba_98	Alem/ARG/81		79.8	0	A	EURO-SA	A81	

Virus sample name:	ETH/4/2022
Sender reference:	10974
Location of origin:	Debre Libanose, North Shoa, Oromia
Country of origin:	Ethiopia
Date of collection:	30/03/2022
Host species:	bovine
Serotype:	A
Topotype:	AFRICA
Lineage:	G-IV
Sublineage:	
Sequence length:	633
Ambiguities:	0
Material submitted for sequencing:	WRL-LFBK1
Harvest date of material:	10/07/2022
Primers:	A-1C562F/EUR-2B52R; FMD-3161F/FMD-4303R
Received for sequencing:	05/08/2022
Created:	09/08/2022
Last updated:	09/08/2022

VIBASys IDs: sample 51499, genome 51500, sequence viba_51501, sequencing info 51502

Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_41453	ETH/86/2018	cattle	97.2	0	A	AFRICA	G-IV	
viba_41469	ETH/3/2019	cattle	97.0	0	A	AFRICA	G-IV	
viba_51485	ETH/1/2020	bovine	97.0	0	A	AFRICA	G-IV	
viba_40399	ETH/52/2018	cattle	97.0	0	A	AFRICA	G-IV	
viba_40431	ETH/69/2018	cattle	97.0	0	A	AFRICA	G-IV	
viba_40359	ETH/42/2018	cattle	97.0	0	A	AFRICA	G-IV	
viba_40391	ETH/50/2018	cattle	97.0	0	A	AFRICA	G-IV	
viba_40363	ETH/43/2018	cattle	97.0	0	A	AFRICA	G-IV	
viba_41481	ETH/13/2019	cattle	97.0	0	A	AFRICA	G-IV	
viba_40379	ETH/47/2018	cattle	97.0	0	A	AFRICA	G-IV	

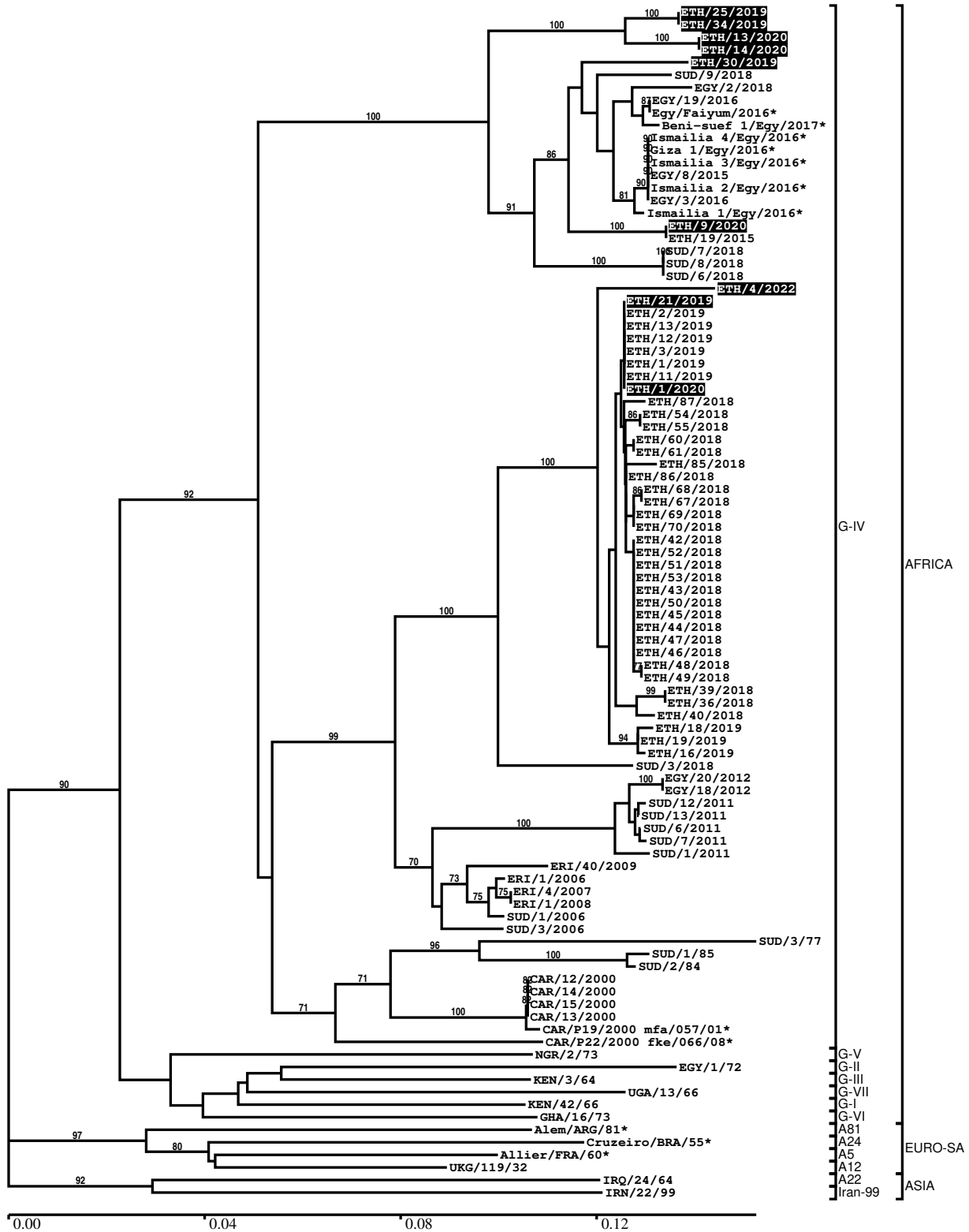
Most Closely Related Prototype Sequences

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

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_178	SUD/3/77		83.6	0	A	AFRICA	G-IV	
viba_347	KEN/42/66		83.0	0	A	AFRICA	G-I	
viba_535	NGR/2/73	bovine	82.9	0	A	AFRICA	G-V	
viba_785	KEN/3/64		82.6	0	A	AFRICA	G-III	
viba_609	GHA/16/73	bovine	81.9	0	A	AFRICA	G-VI	
viba_699	UKG/119/32		81.6	0	A	EURO-SA	A12	
viba_173	UGA/13/66	bovine	80.7	0	A	AFRICA	G-VII	
viba_688	EGY/1/72	bovine	80.3	0	A	AFRICA	G-II	
viba_98	Alem/ARG/81		79.8	0	A	EURO-SA	A81	
viba_677	IRQ/24/64	bovine	79.7	0	A	ASIA	A22	

Report on FMDV A in Ethiopia in 2019, 2020, 2022

Batch: WRLFMD/2022/000012



*, not a WRLFMD Reference Number

Analysis Parameters

VP1 subsequence extractor:	vp1_A
Query sequence set:	WRLFMD/2022/000012-Ethiopia-A (9 sequences)
Sequence database set:	allseqs_A (2338 sequences)
Prototype sequence set:	!prototypes_A (40 sequences)
Number of related sequences reported:	10
Minimal VP1 subsequence match length	600
Sequence alignment method:	muscle (default parameters)
Sequence alignment length:	630
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:	12
VIBASys version:	reflabs-1.1.2

Sequences in the Phylogenetic Tree

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

label	accession	host(s)	lab	country	taxonomic information
ETH/25/2019	n/a	bovine	WRLFMD	Ethiopia	AFRICA/G-IV
ETH/34/2019	n/a	bovine	WRLFMD	Ethiopia	AFRICA/G-IV
ETH/13/2020	n/a	bovine	WRLFMD	Ethiopia	AFRICA/G-IV
ETH/14/2020	n/a	bovine	WRLFMD	Ethiopia	AFRICA/G-IV
ETH/30/2019	n/a	bovine	WRLFMD	Ethiopia	AFRICA/G-IV
SUD/9/2018	MK422594	cattle	WRLFMD	Sudan	AFRICA/G-IV
EGY/2/2018	n/a	cattle	WRLFMD	Egypt	AFRICA/G-IV
EGY/19/2016	MK572799	cattle	WRLFMD	Egypt	AFRICA/G-IV
Egy/Faiyum/2016*	MG552843	cattle	AHRI	Egypt	AFRICA/G-IV
Beni-suef 1/Egy/2017*	MF322693	n/a	MEVAC	Egypt	AFRICA/G-IV
Ismailia 4/Egy/2016*	KX446999	cattle	Suez Canal Univ	Egypt	AFRICA/G-IV
Giza 1/Egy/2016*	KX447000	cattle	Suez Canal Univ	Egypt	AFRICA/G-IV
Ismailia 3/Egy/2016*	KX446998	cattle	Suez Canal Univ	Egypt	AFRICA/G-IV
EGY/8/2015	MK422573	cattle	WRLFMD	Egypt	AFRICA/G-IV
Ismailia 2/Egy/2016*	KX446997	cattle	Suez Canal Univ	Egypt	AFRICA/G-IV
EGY/3/2016	MK422574	cattle	WRLFMD	Egypt	AFRICA/G-IV
Ismailia 1/Egy/2016*	KX446996	cattle	Suez Canal Univ	Egypt	AFRICA/G-IV
ETH/9/2020	n/a	bovine	WRLFMD	Ethiopia	AFRICA/G-IV
ETH/19/2015	MN987497	bovine	WRLFMD	Ethiopia	AFRICA/G-IV
SUD/7/2018	MK422592	cattle	WRLFMD	Sudan	AFRICA/G-IV
SUD/8/2018	MK422593	cattle	WRLFMD	Sudan	AFRICA/G-IV
SUD/6/2018	MK422591	cattle	WRLFMD	Sudan	AFRICA/G-IV
ETH/4/2022	n/a	bovine	WRLFMD	Ethiopia	AFRICA/G-IV
ETH/21/2019	n/a	bovine	WRLFMD	Ethiopia	AFRICA/G-IV
ETH/2/2019	MN987535	cattle	WRLFMD	Ethiopia	AFRICA/G-IV
ETH/13/2019	MN987539	cattle	WRLFMD	Ethiopia	AFRICA/G-IV
ETH/12/2019	MN987538	cattle	WRLFMD	Ethiopia	AFRICA/G-IV
ETH/3/2019	MN987536	cattle	WRLFMD	Ethiopia	AFRICA/G-IV
ETH/1/2019	MN987534	cattle	WRLFMD	Ethiopia	AFRICA/G-IV
ETH/1 1/2019	MN987537	cattle	WRLFMD	Ethiopia	AFRICA/G-IV
ETH/1/2020	n/a	bovine	WRLFMD	Ethiopia	AFRICA/G-IV
ETH/87/2018	MN987533	cattle	WRLFMD	Ethiopia	AFRICA/G-IV

continued on next page

label	accession	host(s)	lab	country	taxonomic information
ETH/54/2018	MN987523	cattle	WRLFMD	Ethiopia	AFRICA/G-IV
ETH/55/2018	MN987524	cattle	WRLFMD	Ethiopia	AFRICA/G-IV
ETH/60/2018	MN987525	cattle	WRLFMD	Ethiopia	AFRICA/G-IV
ETH/61/2018	MN987526	cattle	WRLFMD	Ethiopia	AFRICA/G-IV
ETH/85/2018	MN987531	cattle	WRLFMD	Ethiopia	AFRICA/G-IV
ETH/86/2018	MN987532	cattle	WRLFMD	Ethiopia	AFRICA/G-IV
ETH/68/2018	MN987528	cattle	WRLFMD	Ethiopia	AFRICA/G-IV
ETH/67/2018	MN987527	cattle	WRLFMD	Ethiopia	AFRICA/G-IV
ETH/69/2018	MN987529	cattle	WRLFMD	Ethiopia	AFRICA/G-IV
ETH/70/2018	MN987530	cattle	WRLFMD	Ethiopia	AFRICA/G-IV
ETH/42/2018	MN987511	cattle	WRLFMD	Ethiopia	AFRICA/G-IV
ETH/52/2018	MN987521	cattle	WRLFMD	Ethiopia	AFRICA/G-IV
ETH/51/2018	MN987520	cattle	WRLFMD	Ethiopia	AFRICA/G-IV
ETH/53/2018	MN987522	cattle	WRLFMD	Ethiopia	AFRICA/G-IV
ETH/43/2018	MN987512	cattle	WRLFMD	Ethiopia	AFRICA/G-IV
ETH/50/2018	MN987519	cattle	WRLFMD	Ethiopia	AFRICA/G-IV
ETH/45/2018	MN987514	cattle	WRLFMD	Ethiopia	AFRICA/G-IV
ETH/44/2018	MN987513	cattle	WRLFMD	Ethiopia	AFRICA/G-IV
ETH/47/2018	MN987516	cattle	WRLFMD	Ethiopia	AFRICA/G-IV
ETH/46/2018	MN987515	cattle	WRLFMD	Ethiopia	AFRICA/G-IV
ETH/48/2018	MN987517	cattle	WRLFMD	Ethiopia	AFRICA/G-IV
ETH/49/2018	MN987518	cattle	WRLFMD	Ethiopia	AFRICA/G-IV
ETH/39/2018	MN987509	cattle	WRLFMD	Ethiopia	AFRICA/G-IV
ETH/36/2018	MN987506	cattle	WRLFMD	Ethiopia	AFRICA/G-IV
ETH/40/2018	MN987510	cattle	WRLFMD	Ethiopia	AFRICA/G-IV
ETH/18/2019	MN987541	cattle	WRLFMD	Ethiopia	AFRICA/G-IV
ETH/19/2019	MN987542	cattle	WRLFMD	Ethiopia	AFRICA/G-IV
ETH/16/2019	MN987540	cattle	WRLFMD	Ethiopia	AFRICA/G-IV
SUD/3/2018	MK422589	cattle	WRLFMD	Sudan	AFRICA/G-IV
EGY/20/2012	n/a	cattle	WRLFMD	Egypt	AFRICA/G-IV
EGY/18/2012	n/a	cattle	WRLFMD	Egypt	AFRICA/G-IV
SUD/12/2011	MK422579	cattle	WRLFMD	Sudan	AFRICA/G-IV
SUD/13/2011	MK422578	cattle	WRLFMD	Sudan	AFRICA/G-IV
SUD/6/2011	MK422576	cattle	WRLFMD	Sudan	AFRICA/G-IV
SUD/7/2011	MK422577	cattle	WRLFMD	Sudan	AFRICA/G-IV
SUD/1/2011	MK422575	cattle	WRLFMD	Sudan	AFRICA/G-IV
ERI/40/2009	n/a	cattle	WRLFMD	Eritrea	AFRICA/G-IV
ERI/1/2006	KX258046	cattle	WRLFMD	Eritrea	AFRICA/G-IV
ERI/4/2007	n/a	cattle	WRLFMD	Eritrea	AFRICA/G-IV
ERI/1/2008	n/a	cattle	WRLFMD	Eritrea	AFRICA/G-IV
SUD/1/2006	GU566069	cattle	WRLFMD	Sudan	AFRICA/G-IV
SUD/3/2006	GU566070	cattle	WRLFMD	Sudan	AFRICA/G-IV
SUD/3/77	GU566064	n/a	WRLFMD	Sudan	AFRICA/G-IV
SUD/1/85	GU566068	n/a	WRLFMD	Sudan	AFRICA/G-IV
SUD/2/84	GU566067	n/a	WRLFMD	Sudan	AFRICA/G-IV
CAR/12/2000	KX258130	n/a	WRLFMD	Cameroon	AFRICA/G-IV
CAR/14/2000	KX258132	n/a	WRLFMD	Cameroon	AFRICA/G-IV
CAR/15/2000	EF208755	n/a	WRLFMD	Cameroon	AFRICA/G-IV
CAR/13/2000	KX258131	n/a	WRLFMD	Cameroon	AFRICA/G-IV
CAR/P19/2000 mfa/057/01*	n/a	n/a	WRLFMD	Cameroon	AFRICA/G-IV
CAR/P22/2000 fke/066/08*	n/a	n/a	WRLFMD	Cameroon	AFRICA/G-IV
NGR/2/73	KF561704	bovine	WRLFMD	Niger	AFRICA/G-V
EGY/1/72	EF208756	bovine	WRLFMD	Egypt	AFRICA/G-II
KEN/3/64	AY593761	n/a	PIADC	Kenya	AFRICA/G-III
UGA/13/66	KF561705	bovine	WRLFMD	Uganda	AFRICA/G-VII
KEN/42/66	KF561699	n/a	WRLFMD	Kenya	AFRICA/G-I
GHA/16/73	KF561698	bovine	WRLFMD	Ghana	AFRICA/G-VI
Alem/ARG/81*	AJ306219	n/a	INTA-Argentina	Argentina	EURO-SA/A81
Cruzeiro/BRA/55*	AY593768	bovine	PIADC	Brazil	EURO-SA/A24
Allier/FRA/60*	AY593780	n/a	PIADC	France	EURO-SA/A5
UKG/119/32	M10975	n/a	PIADC	United Kingdom	EURO-SA/A12
IRQ/24/64	AY593763	bovine	PIADC	Iraq	ASIA/A22
IRN/22/99	EF208772	n/a	WRLFMD	Iran	ASIA/Iran-99

*, not a WRLFMD Reference Number

n/a, not available