

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

Genotyping Report

FMDV serotype: O
Country: Ethiopia
Year: 2017, 2018
Batch: WRLFMD/2018/00009
No. of sequences: 11
Report date: 12th April 2018
Report generated by: Nick Knowles
Report checked by: Kasia Bankowska



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

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Virus sample name:	ETH/10/2017
Sender reference:	ET-625841
Location of origin:	Este, South Gondar Zone, Amhara
Country of origin:	Ethiopia
Date of collection:	24/10/2017
Host species:	cattle
Serotype:	O
Topotype:	EA-3
Lineage:	
Sublineage:	
Sequence length:	633
Ambiguities:	0
Material submitted for sequencing:	RNA ex. Orig.
Harvest date of material:	n/a
Primers:	O-1C244F/EUR-2B52R; O-1C272F/EUR-2B52R
Received for sequencing:	11/04/2018
Created:	12/04/2018
Last updated:	12/04/2018
VIBASys IDs: sample 36282, genome 36283, sequence viba_36284, sequencing info 36285	

Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_29606	EGY/9/2016	cattle	98.9	0	O	EA-3		
viba_30429	Ismailia 11/Egy/2016	cattle	98.9	0	O	EA-3		
viba_29622	EGY/14/2016	cattle	98.9	0	O	EA-3		
viba_29582	EGY/13/2015	cattle	98.9	0	O	EA-3		
viba_29614	EGY/11/2016	cattle	98.9	0	O	EA-3		
viba_30405	Giza 2/Egy/2016	cattle	98.9	0	O	EA-3		
viba_29610	EGY/10/2016	cattle	98.7	0	O	EA-3		
viba_29586	EGY/14/2015	cattle	98.7	0	O	EA-3		
viba_30394	Ismailia 6/Egy/2016	cattle	98.7	0	O	EA-3		
viba_29594	EGY/5/2016	cattle	98.7	0	O	EA-3		

Most Closely Related Prototype Sequences

see http://www.wrlfmd.org/fmd_genotyping/prototypes.htm

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_116	SUD/2/86	bovine	87.5	0	O	EA-3		
viba_854	ETH/1/2007	cattle	85.5	0	O	EA-3		
viba_408	ETH/3/2004	cattle	85.4	0	O	EA-3		
viba_285	UKG/35/2001	porcine	83.7	0	O	ME-SA	PanAsia	
viba_85	UGA/3/2002		83.6	0	O	EA-2		
viba_766	IRN/31/2009	cattle	83.6	0	O	ME-SA	PanAsia-2	FAR-09
viba_617	IND/53/79	bovine	83.6	0	O	ME-SA		
viba_221	MAL/1/98		83.6	0	O	EA-2		
viba_705	KUW/3/97	bovine	83.4	0	O	ME-SA	Ind-2001	a
viba_263	TAN/2/2004	bovine	83.1	0	O	EA-2		

Virus sample name:	ETH/17/2017
Sender reference:	ET-2942
Location of origin:	Kewet, North Shewa Zone, Amhara
Country of origin:	Ethiopia
Date of collection:	20/12/2017
Host species:	cattle
Serotype:	O
Topotype:	EA-3
Lineage:	
Sublineage:	
Sequence length:	633
Ambiguities:	0
Material submitted for sequencing:	RNA ex. Orig.
Harvest date of material:	n/a
Primers:	O-1C244F/EUR-2B52R; O-1C272F/EUR-2B52R
Received for sequencing:	11/04/2018
Created:	12/04/2018
Last updated:	12/04/2018
VIBASys IDs: sample 36286, genome 36287, sequence viba_36288, sequencing info 36289	

Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_36312	ETH/8/2018	cattle	99.4	0	O	EA-3		
viba_36328	ETH/13/2018	cattle	99.2	0	O	EA-3		
viba_36324	ETH/12/2018	cattle	99.2	0	O	EA-3		
viba_36320	ETH/10/2018	cattle	99.1	0	O	EA-3		
viba_36308	ETH/7/2018	cattle	99.1	0	O	EA-3		
viba_36336	ETH/15/2018	cattle	99.1	0	O	EA-3		
viba_36332	ETH/14/2018	cattle	98.9	0	O	EA-3		
viba_36316	ETH/9/2018	cattle	98.9	0	O	EA-3		
viba_30380	Ismailia 2/Egy/2016	cattle	98.1	0	O	EA-3		
viba_29598	EGY/7/2016	water buffalo	97.9	0	O	EA-3		

Most Closely Related Prototype Sequences

see http://www.wrlfmd.org/fmd_genotyping/prototypes.htm

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	85.6	0	O	EA-3		
viba_408	ETH/3/2004	cattle	84.3	0	O	EA-3		
viba_523	K83/79		83.8	0	O	EA-1		
viba_85	UGA/3/2002		83.7	0	O	EA-2		
viba_617	IND/53/79	bovine	83.5	0	O	ME-SA		
viba_850	NEP/1/2015	cattle	83.5	1	O	ME-SA	PanAsia-2	KAT-15
viba_766	IRN/31/2009	cattle	83.4	0	O	ME-SA	PanAsia-2	FAR-09
viba_359	Manisa/TUR/69		83.4	0	O	ME-SA		
viba_285	UKG/35/2001	porcine	83.4	0	O	ME-SA	PanAsia	

Virus sample name:	ETH/7/2018
Sender reference:	ET-193317
Location of origin:	Kewet, North Shewa Zone, Amhara
Country of origin:	Ethiopia
Date of collection:	24/01/2018
Host species:	cattle
Serotype:	O
Topotype:	EA-3
Lineage:	
Sublineage:	
Sequence length:	633
Ambiguities:	0
Material submitted for sequencing:	RNA ex. Orig.
Harvest date of material:	n/a
Primers:	O-1C244F/EUR-2B52R; O-1C272F/EUR-2B52R
Received for sequencing:	11/04/2018
Created:	12/04/2018
Last updated:	12/04/2018
VIBASys IDs: sample 36306, genome 36307, sequence viba_36308, sequencing info 36309	

Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_36312	ETH/8/2018	cattle	99.4	0	O	EA-3		
viba_36328	ETH/13/2018	cattle	99.2	0	O	EA-3		
viba_36324	ETH/12/2018	cattle	99.2	0	O	EA-3		
viba_36320	ETH/10/2018	cattle	99.1	0	O	EA-3		
viba_36336	ETH/15/2018	cattle	99.1	0	O	EA-3		
viba_36288	ETH/17/2017	cattle	99.1	0	O	EA-3		
viba_36332	ETH/14/2018	cattle	98.9	0	O	EA-3		
viba_36316	ETH/9/2018	cattle	98.9	0	O	EA-3		
viba_30380	Ismailia 2/Egy/2016	cattle	98.1	0	O	EA-3		
viba_29606	EGY/9/2016	cattle	97.9	0	O	EA-3		

Most Closely Related Prototype Sequences

see http://www.wrlfmd.org/fmd_genotyping/prototypes.htm

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_116	SUD/2/86	bovine	88.2	0	O	EA-3		
viba_854	ETH/1/2007	cattle	86.6	0	O	EA-3		
viba_408	ETH/3/2004	cattle	85.2	0	O	EA-3		
viba_617	IND/53/79	bovine	84.2	0	O	ME-SA		
viba_766	IRN/31/2009	cattle	84.0	0	O	ME-SA	PanAsia-2	FAR-09
viba_850	NEP/1/2015	cattle	84.0	1	O	ME-SA	PanAsia-2	KAT-15
viba_523	K83/79		83.9	0	O	EA-1		
viba_285	UKG/35/2001	porcine	83.8	0	O	ME-SA	PanAsia	
viba_85	UGA/3/2002		83.7	0	O	EA-2		
viba_354	PAK/16/2010	cattle	83.6	0	O	ME-SA	PanAsia-2	PUN-10

Virus sample name:	ETH/8/2018
Sender reference:	ET-193320
Location of origin:	Kewet, North Shewa Zone, Amhara
Country of origin:	Ethiopia
Date of collection:	24/01/2018
Host species:	cattle
Serotype:	O
Topotype:	EA-3
Lineage:	
Sublineage:	
Sequence length:	633
Ambiguities:	0
Material submitted for sequencing:	RNA ex. Orig.
Harvest date of material:	n/a
Primers:	O-1C244F/EUR-2B52R; O-1C272F/EUR-2B52R
Received for sequencing:	11/04/2018
Created:	12/04/2018
Last updated:	12/04/2018
VIBASys IDs: sample 36310, genome 36311, sequence viba_36312, sequencing info 36313	

Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_36328	ETH/13/2018	cattle	99.5	0	O	EA-3		
viba_36324	ETH/12/2018	cattle	99.5	0	O	EA-3		
viba_36320	ETH/10/2018	cattle	99.4	0	O	EA-3		
viba_36308	ETH/7/2018	cattle	99.4	0	O	EA-3		
viba_36336	ETH/15/2018	cattle	99.4	0	O	EA-3		
viba_36288	ETH/17/2017	cattle	99.4	0	O	EA-3		
viba_36332	ETH/14/2018	cattle	99.2	0	O	EA-3		
viba_36316	ETH/9/2018	cattle	99.2	0	O	EA-3		
viba_30380	Ismailia 2/Egy/2016	cattle	98.4	0	O	EA-3		
viba_29606	EGY/9/2016	cattle	98.3	0	O	EA-3		

Most Closely Related Prototype Sequences

see http://www.wrlfmd.org/fmd_genotyping/prototypes.htm

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_116	SUD/2/86	bovine	88.2	0	O	EA-3		
viba_854	ETH/1/2007	cattle	86.0	0	O	EA-3		
viba_408	ETH/3/2004	cattle	84.9	0	O	EA-3		
viba_523	K83/79		83.9	0	O	EA-1		
viba_766	IRN/31/2009	cattle	83.7	0	O	ME-SA	PanAsia-2	FAR-09
viba_85	UGA/3/2002		83.6	0	O	EA-2		
viba_617	IND/53/79	bovine	83.6	0	O	ME-SA		
viba_850	NEP/1/2015	cattle	83.6	1	O	ME-SA	PanAsia-2	KAT-15
viba_285	UKG/35/2001	porcine	83.5	0	O	ME-SA	PanAsia	
viba_221	MAL/1/98		83.4	0	O	EA-2		

Virus sample name:	ETH/9/2018
Sender reference:	ET-193323
Location of origin:	Kewet, North Shewa Zone, Amhara
Country of origin:	Ethiopia
Date of collection:	24/01/2018
Host species:	cattle
Serotype:	O
Topotype:	EA-3
Lineage:	
Sublineage:	
Sequence length:	633
Ambiguities:	0
Material submitted for sequencing:	RNA ex. Orig.
Harvest date of material:	n/a
Primers:	O-1C244F/EUR-2B52R; O-1C272F/EUR-2B52R
Received for sequencing:	11/04/2018
Created:	12/04/2018
Last updated:	12/04/2018
VIBASys IDs: sample 36314, genome 36315, sequence viba_36316, sequencing info 36317	

Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_36320	ETH/10/2018	cattle	99.8	0	O	EA-3		
viba_36312	ETH/8/2018	cattle	99.2	0	O	EA-3		
viba_36328	ETH/13/2018	cattle	99.1	0	O	EA-3		
viba_36324	ETH/12/2018	cattle	99.1	0	O	EA-3		
viba_36308	ETH/7/2018	cattle	98.9	0	O	EA-3		
viba_36336	ETH/15/2018	cattle	98.9	0	O	EA-3		
viba_36288	ETH/17/2017	cattle	98.9	0	O	EA-3		
viba_36332	ETH/14/2018	cattle	98.7	0	O	EA-3		
viba_30380	Ismailia 2/Egy/2016	cattle	97.9	0	O	EA-3		
viba_29606	EGY/9/2016	cattle	97.8	0	O	EA-3		

Most Closely Related Prototype Sequences

see http://www.wrlfmd.org/fmd_genotyping/prototypes.htm

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_116	SUD/2/86	bovine	88.0	0	O	EA-3		
viba_854	ETH/1/2007	cattle	85.8	0	O	EA-3		
viba_408	ETH/3/2004	cattle	84.5	0	O	EA-3		
viba_766	IRN/31/2009	cattle	83.6	0	O	ME-SA	PanAsia-2	FAR-09
viba_617	IND/53/79	bovine	83.4	0	O	ME-SA		
viba_860	IRN/6/2015	cattle	83.4	0	O	ME-SA	PanAsia-2	QOM-15
viba_285	UKG/35/2001	porcine	83.4	0	O	ME-SA	PanAsia	
viba_523	K83/79		83.4	0	O	EA-1		
viba_850	NEP/1/2015	cattle	83.2	1	O	ME-SA	PanAsia-2	KAT-15
viba_85	UGA/3/2002		83.1	0	O	EA-2		

Virus sample name:	ETH/10/2018
Sender reference:	ET-193324
Location of origin:	Kewet, North Shewa Zone, Amhara
Country of origin:	Ethiopia
Date of collection:	24/01/2018
Host species:	cattle
Serotype:	O
Topotype:	EA-3
Lineage:	
Sublineage:	
Sequence length:	633
Ambiguities:	0
Material submitted for sequencing:	RNA ex. Orig.
Harvest date of material:	n/a
Primers:	O-1C244F/EUR-2B52R; O-1C272F/EUR-2B52R
Received for sequencing:	11/04/2018
Created:	12/04/2018
Last updated:	12/04/2018
VIBASys IDs: sample 36318, genome 36319, sequence viba_36320, sequencing info 36321	

Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_36316	ETH/9/2018	cattle	99.8	0	O	EA-3		
viba_36312	ETH/8/2018	cattle	99.4	0	O	EA-3		
viba_36328	ETH/13/2018	cattle	99.2	0	O	EA-3		
viba_36324	ETH/12/2018	cattle	99.2	0	O	EA-3		
viba_36308	ETH/7/2018	cattle	99.1	0	O	EA-3		
viba_36336	ETH/15/2018	cattle	99.1	0	O	EA-3		
viba_36288	ETH/17/2017	cattle	99.1	0	O	EA-3		
viba_36332	ETH/14/2018	cattle	98.9	0	O	EA-3		
viba_30380	Ismailia 2/Egy/2016	cattle	98.1	0	O	EA-3		
viba_29606	EGY/9/2016	cattle	97.9	0	O	EA-3		

Most Closely Related Prototype Sequences

see http://www.wrlfmd.org/fmd_genotyping/prototypes.htm

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_116	SUD/2/86	bovine	88.2	0	O	EA-3		
viba_854	ETH/1/2007	cattle	86.0	0	O	EA-3		
viba_408	ETH/3/2004	cattle	84.6	0	O	EA-3		
viba_766	IRN/31/2009	cattle	83.7	0	O	ME-SA	PanAsia-2	FAR-09
viba_617	IND/53/79	bovine	83.6	0	O	ME-SA		
viba_860	IRN/6/2015	cattle	83.6	0	O	ME-SA	PanAsia-2	QOM-15
viba_523	K83/79		83.6	0	O	EA-1		
viba_285	UKG/35/2001	porcine	83.5	0	O	ME-SA	PanAsia	
viba_85	UGA/3/2002		83.3	0	O	EA-2		
viba_850	NEP/1/2015	cattle	83.3	1	O	ME-SA	PanAsia-2	KAT-15

Virus sample name:	ETH/12/2018
Sender reference:	ET-19401
Location of origin:	Albeko, South Wollo Zone, Amhara
Country of origin:	Ethiopia
Date of collection:	31/01/2018
Host species:	cattle
Serotype:	O
Topotype:	EA-3
Lineage:	
Sublineage:	
Sequence length:	633
Ambiguities:	0
Material submitted for sequencing:	RNA ex. Orig.
Harvest date of material:	n/a
Primers:	O-1C244F/EUR-2B52R; O-1C272F/EUR-2B52R
Received for sequencing:	11/04/2018
Created:	12/04/2018
Last updated:	12/04/2018
VIBASys IDs: sample 36322, genome 36323, sequence viba_36324, sequencing info 36325	

Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_36328	ETH/13/2018	cattle	100.0	0	O	EA-3		
viba_36312	ETH/8/2018	cattle	99.5	0	O	EA-3		
viba_36320	ETH/10/2018	cattle	99.2	0	O	EA-3		
viba_36308	ETH/7/2018	cattle	99.2	0	O	EA-3		
viba_36336	ETH/15/2018	cattle	99.2	0	O	EA-3		
viba_36288	ETH/17/2017	cattle	99.2	0	O	EA-3		
viba_36332	ETH/14/2018	cattle	99.1	0	O	EA-3		
viba_36316	ETH/9/2018	cattle	99.1	0	O	EA-3		
viba_30380	Ismailia 2/Egy/2016	cattle	98.3	0	O	EA-3		
viba_29606	EGY/9/2016	cattle	98.1	0	O	EA-3		

Most Closely Related Prototype Sequences

see http://www.wrlfmd.org/fmd_genotyping/prototypes.htm

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_116	SUD/2/86	bovine	88.3	0	O	EA-3		
viba_854	ETH/1/2007	cattle	86.1	0	O	EA-3		
viba_408	ETH/3/2004	cattle	85.1	0	O	EA-3		
viba_523	K83/79		84.0	0	O	EA-1		
viba_617	IND/53/79	bovine	83.8	0	O	ME-SA		
viba_850	NEP/1/2015	cattle	83.8	1	O	ME-SA	PanAsia-2	KAT-15
viba_766	IRN/31/2009	cattle	83.6	0	O	ME-SA	PanAsia-2	FAR-09
viba_221	MAL/1/98		83.6	0	O	EA-2		
viba_705	KUW/3/97	bovine	83.5	0	O	ME-SA	Ind-2001	a
viba_85	UGA/3/2002		83.4	0	O	EA-2		

Virus sample name:	ETH/13/2018
Sender reference:	ET-19402
Location of origin:	Albeko, South Wollo Zone, Amhara
Country of origin:	Ethiopia
Date of collection:	31/01/2018
Host species:	cattle
Serotype:	O
Topotype:	EA-3
Lineage:	
Sublineage:	
Sequence length:	633
Ambiguities:	0
Material submitted for sequencing:	RNA ex. Orig.
Harvest date of material:	n/a
Primers:	O-1C244F/EUR-2B52R; O-1C272F/EUR-2B52R
Received for sequencing:	11/04/2018
Created:	12/04/2018
Last updated:	12/04/2018
VIBASys IDs: sample 36326, genome 36327, sequence viba_36328, sequencing info 36329	

Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_36324	ETH/12/2018	cattle	100.0	0	O	EA-3		
viba_36312	ETH/8/2018	cattle	99.5	0	O	EA-3		
viba_36320	ETH/10/2018	cattle	99.2	0	O	EA-3		
viba_36308	ETH/7/2018	cattle	99.2	0	O	EA-3		
viba_36336	ETH/15/2018	cattle	99.2	0	O	EA-3		
viba_36288	ETH/17/2017	cattle	99.2	0	O	EA-3		
viba_36332	ETH/14/2018	cattle	99.1	0	O	EA-3		
viba_36316	ETH/9/2018	cattle	99.1	0	O	EA-3		
viba_30380	Ismailia 2/Egy/2016	cattle	98.3	0	O	EA-3		
viba_29606	EGY/9/2016	cattle	98.1	0	O	EA-3		

Most Closely Related Prototype Sequences

see http://www.wrlfmd.org/fmd_genotyping/prototypes.htm

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_116	SUD/2/86	bovine	88.3	0	O	EA-3		
viba_854	ETH/1/2007	cattle	86.1	0	O	EA-3		
viba_408	ETH/3/2004	cattle	85.1	0	O	EA-3		
viba_523	K83/79		84.0	0	O	EA-1		
viba_617	IND/53/79	bovine	83.8	0	O	ME-SA		
viba_850	NEP/1/2015	cattle	83.8	1	O	ME-SA	PanAsia-2	KAT-15
viba_766	IRN/31/2009	cattle	83.6	0	O	ME-SA	PanAsia-2	FAR-09
viba_221	MAL/1/98		83.6	0	O	EA-2		
viba_705	KUW/3/97	bovine	83.5	0	O	ME-SA	Ind-2001	a
viba_85	UGA/3/2002		83.4	0	O	EA-2		

Virus sample name:	ETH/14/2018
Sender reference:	ET-19411
Location of origin:	Werrababu, South Wollo Zone, Amhara
Country of origin:	Ethiopia
Date of collection:	31/01/2018
Host species:	cattle
Serotype:	O
Topotype:	EA-3
Lineage:	
Sublineage:	
Sequence length:	633
Ambiguities:	0
Material submitted for sequencing:	RNA ex. Orig.
Harvest date of material:	n/a
Primers:	O-1C244F/EUR-2B52R; O-1C272F/EUR-2B52R
Received for sequencing:	11/04/2018
Created:	12/04/2018
Last updated:	12/04/2018
VIBASys IDs: sample 36330, genome 36331, sequence viba_36332, sequencing info 36333	

Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_36336	ETH/15/2018	cattle	99.8	0	O	EA-3		
viba_36312	ETH/8/2018	cattle	99.2	0	O	EA-3		
viba_36328	ETH/13/2018	cattle	99.1	0	O	EA-3		
viba_36324	ETH/12/2018	cattle	99.1	0	O	EA-3		
viba_36320	ETH/10/2018	cattle	98.9	0	O	EA-3		
viba_36308	ETH/7/2018	cattle	98.9	0	O	EA-3		
viba_36288	ETH/17/2017	cattle	98.9	0	O	EA-3		
viba_36316	ETH/9/2018	cattle	98.7	0	O	EA-3		
viba_30380	Ismailia 2/Egy/2016	cattle	97.9	0	O	EA-3		
viba_29606	EGY/9/2016	cattle	97.8	0	O	EA-3		

Most Closely Related Prototype Sequences

see http://www.wrlfmd.org/fmd_genotyping/prototypes.htm

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	85.6	0	O	EA-3		
viba_408	ETH/3/2004	cattle	84.9	0	O	EA-3		
viba_523	K83/79		83.9	0	O	EA-1		
viba_766	IRN/31/2009	cattle	83.7	0	O	ME-SA	PanAsia-2	FAR-09
viba_617	IND/53/79	bovine	83.6	0	O	ME-SA		
viba_850	NEP/1/2015	cattle	83.6	1	O	ME-SA	PanAsia-2	KAT-15
viba_85	UGA/3/2002		83.3	0	O	EA-2		
viba_354	PAK/16/2010	cattle	83.3	0	O	ME-SA	PanAsia-2	PUN-10
viba_221	MAL/1/98		83.3	0	O	EA-2		

Virus sample name:	ETH/15/2018
Sender reference:	ET-19412
Location of origin:	Werrababu, South Wollo Zone, Amhara
Country of origin:	Ethiopia
Date of collection:	31/01/2018
Host species:	cattle
Serotype:	O
Topotype:	EA-3
Lineage:	
Sublineage:	
Sequence length:	633
Ambiguities:	0
Material submitted for sequencing:	RNA ex. Orig.
Harvest date of material:	n/a
Primers:	O-1C244F/EUR-2B52R; O-1C272F/EUR-2B52R
Received for sequencing:	11/04/2018
Created:	12/04/2018
Last updated:	12/04/2018
VIBASys IDs: sample 36334, genome 36335, sequence viba_36336, sequencing info 36337	

Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_36332	ETH/14/2018	cattle	99.8	0	O	EA-3		
viba_36312	ETH/8/2018	cattle	99.4	0	O	EA-3		
viba_36328	ETH/13/2018	cattle	99.2	0	O	EA-3		
viba_36324	ETH/12/2018	cattle	99.2	0	O	EA-3		
viba_36320	ETH/10/2018	cattle	99.1	0	O	EA-3		
viba_36308	ETH/7/2018	cattle	99.1	0	O	EA-3		
viba_36288	ETH/17/2017	cattle	99.1	0	O	EA-3		
viba_36316	ETH/9/2018	cattle	98.9	0	O	EA-3		
viba_30380	Ismailia 2/Egy/2016	cattle	98.1	0	O	EA-3		
viba_29606	EGY/9/2016	cattle	97.9	0	O	EA-3		

Most Closely Related Prototype Sequences

see http://www.wrlfmd.org/fmd_genotyping/prototypes.htm

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	85.6	0	O	EA-3		
viba_408	ETH/3/2004	cattle	84.9	0	O	EA-3		
viba_523	K83/79		83.9	0	O	EA-1		
viba_850	NEP/11/2015	cattle	83.8	1	O	ME-SA	PanAsia-2	KAT-15
viba_766	IRN/31/2009	cattle	83.7	0	O	ME-SA	PanAsia-2	FAR-09
viba_617	IND/53/79	bovine	83.6	0	O	ME-SA		
viba_85	UGA/3/2002		83.4	0	O	EA-2		
viba_221	MAL/1/98		83.4	0	O	EA-2		
viba_354	PAK/16/2010	cattle	83.3	0	O	ME-SA	PanAsia-2	PUN-10

Virus sample name:	ETH/16/2018
Sender reference:	ET-19421
Location of origin:	Gaweta, Keffa Zone, SNNPR
Country of origin:	Ethiopia
Date of collection:	01/02/2018
Host species:	cattle
Serotype:	O
Topotype:	EA-3
Lineage:	
Sublineage:	
Sequence length:	633
Ambiguities:	0
Material submitted for sequencing:	BTy1
Harvest date of material:	22/03/2018
Primers:	O-1C244F/EUR-2B52R; O-1C272F/EUR-2B52R
Received for sequencing:	03/04/2018
Created:	05/04/2018
Last updated:	05/04/2018
VIBASys IDs: sample 36232, genome 36233, sequence viba_36234, sequencing info 36235	

Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
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_34239	EGY/33/2017	cattle	98.6	0	O	EA-3		
viba_35525	Behira 2/Egy/2017		98.4	0	O	EA-3		
viba_34219	EGY/27/2017	cattle	98.4	0	O	EA-3		
viba_34175	EGY/9/2017	cattle	98.4	0	O	EA-3		
viba_34215	EGY/26/2017	cattle	98.4	0	O	EA-3		
viba_34171	EGY/8/2017	cattle	98.4	0	O	EA-3		

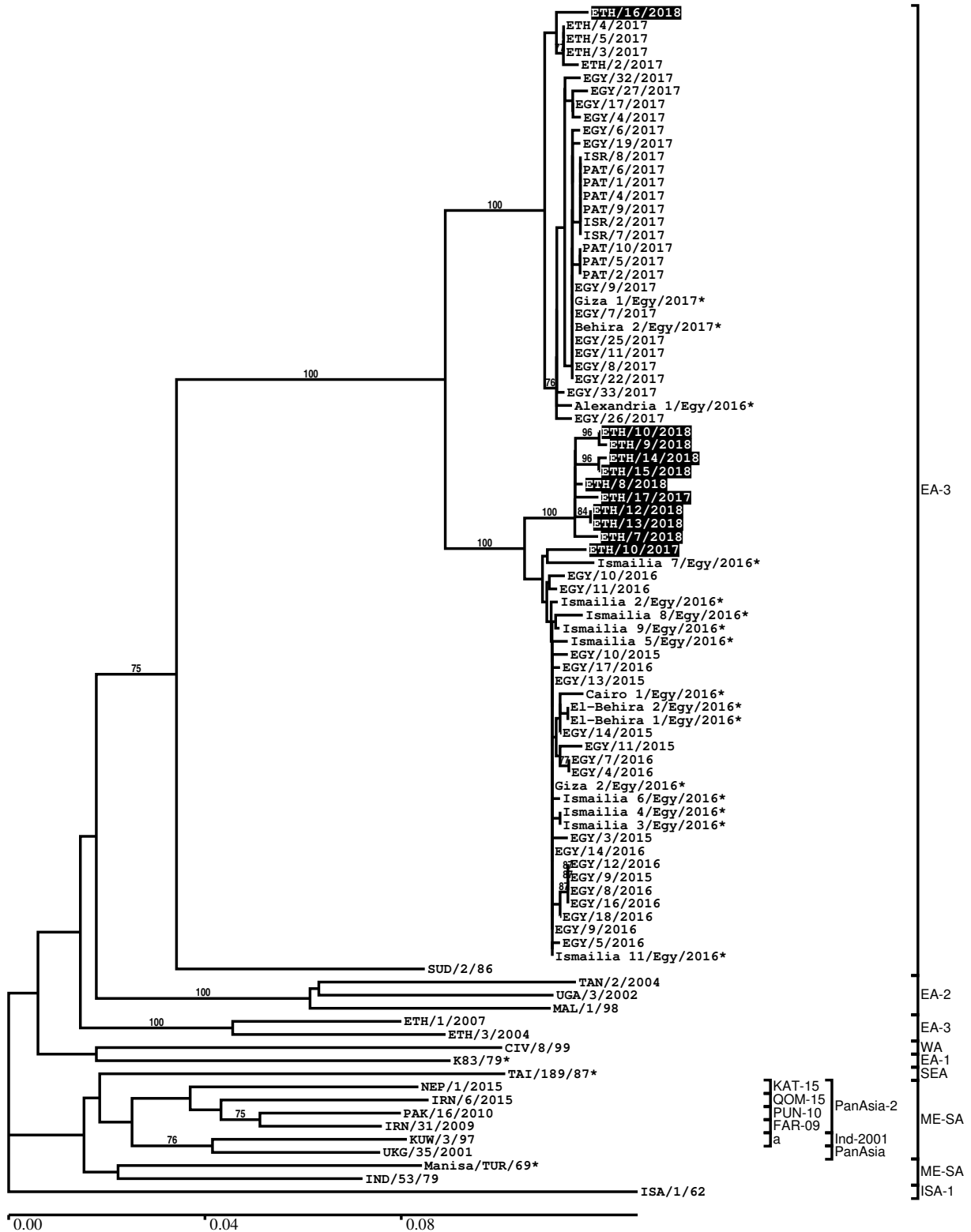
Most Closely Related Prototype Sequences

see http://www.wrlfmd.org/fmd_genotyping/prototypes.htm

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_85	UGA/3/2002		83.9	0	O	EA-2		
viba_263	TAN/2/2004	bovine	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 2017, 2018

Batch: WRLFMD/2018/00009



*, not a WRLFMD Reference Number

Analysis Parameters

VP1 subsequence extractor:	vp1_O
Query sequence set:	WRLFMD/2018/00009-Ethiopia-O (11 sequences)
Sequence database set:	allseqs_O (3744 sequences)
Prototype sequence set:	!prototypes_O (48 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:	16
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/16/2018	n/a	cattle	WRLFMD	Ethiopia	EA-3
ETH/4/2017	n/a	cattle	WRLFMD	Ethiopia	EA-3
ETH/5/2017	n/a	cattle	WRLFMD	Ethiopia	EA-3
ETH/3/2017	n/a	cattle	WRLFMD	Ethiopia	EA-3
ETH/2/2017	n/a	cattle	WRLFMD	Ethiopia	EA-3
EGY/32/2017	n/a	cattle	WRLFMD	Egypt	EA-3
EGY/27/2017	n/a	cattle	WRLFMD	Egypt	EA-3
EGY/17/2017	n/a	cattle	WRLFMD	Egypt	EA-3
EGY/4/2017	n/a	water buffalo	WRLFMD	Egypt	EA-3
EGY/6/2017	n/a	cattle	WRLFMD	Egypt	EA-3
EGY/19/2017	n/a	cattle	WRLFMD	Egypt	EA-3
ISR/8/2017	n/a	cattle	WRLFMD	Israel	EA-3
PAT/6/2017	n/a	cattle	WRLFMD	Palestinian AT	EA-3
PAT/1/2017	n/a	cattle	WRLFMD	Palestinian AT	EA-3
PAT/4/2017	n/a	cattle	WRLFMD	Palestinian AT	EA-3
PAT/9/2017	n/a	cattle	WRLFMD	Palestinian AT	EA-3
ISR/2/2017	n/a	cattle	WRLFMD	Israel	EA-3
ISR/7/2017	n/a	cattle	WRLFMD	Israel	EA-3
PAT/10/2017	n/a	cattle	WRLFMD	Palestinian AT	EA-3
PAT/5/2017	n/a	cattle	WRLFMD	Palestinian AT	EA-3
PAT/2/2017	n/a	cattle	WRLFMD	Palestinian AT	EA-3
EGY/9/2017	n/a	cattle	WRLFMD	Egypt	EA-3
Giza 1/Egy/2017*	MF322682	n/a	MEVAC	Egypt	EA-3
EGY/7/2017	n/a	cattle	WRLFMD	Egypt	EA-3
Behira 2/Egy/2017*	MF322687	n/a	MEVAC	Egypt	EA-3
EGY/25/2017	n/a	cattle	WRLFMD	Egypt	EA-3
EGY/11/2017	n/a	water buffalo	WRLFMD	Egypt	EA-3
EGY/8/2017	n/a	cattle	WRLFMD	Egypt	EA-3
EGY/22/2017	n/a	water buffalo	WRLFMD	Egypt	EA-3
EGY/33/2017	n/a	cattle	WRLFMD	Egypt	EA-3
Alexandria 1/Egy/2016*	MF322680	n/a	MEVAC	Egypt	EA-3
EGY/26/2017	n/a	cattle	WRLFMD	Egypt	EA-3
ETH/10/2018	n/a	cattle	WRLFMD	Ethiopia	EA-3
ETH/9/2018	n/a	cattle	WRLFMD	Ethiopia	EA-3
ETH/14/2018	n/a	cattle	WRLFMD	Ethiopia	EA-3
ETH/15/2018	n/a	cattle	WRLFMD	Ethiopia	EA-3

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label	accession	host(s)	lab	country	taxonomic information
ETH/8/2018	n/a	cattle	WRLFMD	Ethiopia	EA-3
ETH/17/2017	n/a	cattle	WRLFMD	Ethiopia	EA-3
ETH/12/2018	n/a	cattle	WRLFMD	Ethiopia	EA-3
ETH/13/2018	n/a	cattle	WRLFMD	Ethiopia	EA-3
ETH/7/2018	n/a	cattle	WRLFMD	Ethiopia	EA-3
ETH/10/2017	n/a	cattle	WRLFMD	Ethiopia	EA-3
Ismailia 7/Egy/2016*	KX447133	cattle	Suez Canal Univ	Egypt	EA-3
EGY/10/2016	n/a	cattle	WRLFMD	Egypt	EA-3
EGY/11/2016	n/a	cattle	WRLFMD	Egypt	EA-3
Ismailia 2/Egy/2016*	KX447125	cattle	Suez Canal Univ	Egypt	EA-3
Ismailia 8/Egy/2016*	KX447134	cattle	Suez Canal Univ	Egypt	EA-3
Ismailia 9/Egy/2016*	KX447135	cattle	Suez Canal Univ	Egypt	EA-3
Ismailia 5/Egy/2016*	KX447128	cattle	Suez Canal Univ	Egypt	EA-3
EGY/10/2015	n/a	cattle	WRLFMD	Egypt	EA-3
EGY/17/2016	n/a	cattle	WRLFMD	Egypt	EA-3
EGY/13/2015	n/a	cattle	WRLFMD	Egypt	EA-3
Cairo 1/Egy/2016*	KX447130	cattle	Suez Canal Univ	Egypt	EA-3
El-Behira 2/Egy/2016*	KX447122	cattle	Suez Canal Univ	Egypt	EA-3
El-Behira 1/Egy/2016*	KX447121	cattle	Suez Canal Univ	Egypt	EA-3
EGY/14/2015	n/a	cattle	WRLFMD	Egypt	EA-3
EGY/11/2015	n/a	water buffalo	WRLFMD	Egypt	EA-3
EGY/7/2016	n/a	water buffalo	WRLFMD	Egypt	EA-3
EGY/4/2016	n/a	cattle	WRLFMD	Egypt	EA-3
Giza 2/Egy/2016*	KX447132	cattle	Suez Canal Univ	Egypt	EA-3
Ismailia 6/Egy/2016*	KX447129	cattle	Suez Canal Univ	Egypt	EA-3
Ismailia 4/Egy/2016*	KX447127	cattle	Suez Canal Univ	Egypt	EA-3
Ismailia 3/Egy/2016*	KX447126	cattle	Suez Canal Univ	Egypt	EA-3
EGY/3/2015	n/a	cattle	WRLFMD	Egypt	EA-3
EGY/14/2016	n/a	cattle	WRLFMD	Egypt	EA-3
EGY/12/2016	n/a	cattle	WRLFMD	Egypt	EA-3
EGY/9/2015	n/a	cattle	WRLFMD	Egypt	EA-3
EGY/8/2016	n/a	cattle	WRLFMD	Egypt	EA-3
EGY/16/2016	n/a	cattle	WRLFMD	Egypt	EA-3
EGY/18/2016	n/a	cattle	WRLFMD	Egypt	EA-3
EGY/9/2016	n/a	cattle	WRLFMD	Egypt	EA-3
EGY/5/2016	n/a	cattle	WRLFMD	Egypt	EA-3
Ismailia 11/Egy/2016*	KX447138	cattle	Suez Canal Univ	Egypt	EA-3
SUD/2/86	DQ165075	bovine	WRLFMD	Sudan	EA-3
TAN/2/2004	KF561679	bovine	WRLFMD	Tanzania	EA-2
UGA/3/2002	DQ165077	n/a	WRLFMD	Uganda	EA-2
MAL/1/98	DQ165074	n/a	WRLFMD	Malawi	EA-2
ETH/1/2007	FJ798137	cattle	WRLFMD	Ethiopia	EA-3
ETH/3/2004	FJ798109	cattle	WRLFMD	Ethiopia	EA-3
CIV/8/99	AJ303485	bovine	WRLFMD	Cote d'Ivoire	WA
K83/79*	AJ303511	n/a	WRLFMD	Kenya	EA-1
TAI/189/87*	KY091288	bovine	TRRL	Thailand	SEA
NEP/1/2015	n/a	cattle	WRLFMD	Nepal	ME-SA/PanAsia-2/KAT-15
IRN/6/2015	n/a	cattle	WRLFMD	Iran	ME-SA/PanAsia-2/QOM-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
KUW/3/97	DQ164904	bovine	WRLFMD	Kuwait	ME-SA/Ind-2001/a
UKG/35/2001	AJ539141	porcine	PIADC	United Kingdom	ME-SA/PanAsia
Manisa/TUR/69*	AY593823	n/a	PIADC	Turkey	ME-SA
IND/53/79	AF292107	bovine	PD-FMD	India	ME-SA

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label	accession	host(s)	lab	country	taxonomic information
ISA/1/62	AJ303500	n/a	WRLFMD	Indonesia	ISA-1

*, not a WRLFMD Reference Number

n/a, not available