

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

Genotyping Report

FMDV serotype: A
Country: Egypt
Year: 2015, 2016
Batch: WRLFMD/2016/00024
No. of sequences: 2
Report date: 3rd August 2016
Report generated by: Nick Knowles
Report checked by: Kasia Bankowska

Analysis Parameters

VP1 subsequence extractor: vp1_A
Query sequence set: WRLFMD/2016/00024-Egypt-A (2 sequences)
Sequence database set: !allseqs_A (1528 sequences)
Prototype sequence set: !prototypes_A (34 sequences)
Number of related sequences reported: 10
Minimal VP1 subsequence match length: 600
VIBASys version: reflabs-1.0.3



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

email: reporting@pirbright.ac.uk

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Virus sample name:	EGY/8/2015
Sender reference:	11. RL /226 a
Location of origin:	Elrahmania, Elrahmania, Beheira
Country of origin:	Egypt
Date of collection:	21/09/2015
Host species:	cattle
Serotype:	A
Topotype:	AFRICA
Lineage:	G-IV
Sublineage:	
Sequence length:	633
Ambiguities:	0
Material submitted for sequencing:	BTy1
Harvest date of material:	12/07/2016
Primers:	A-1C562F/EUR-2B52R; A-1C612F/EUR-2B52R
Received for sequencing:	29/07/2016
Created:	01/08/2016
Last updated:	01/08/2016
VIBASys IDs: sample 29556, genome 29557, sequence viba_29558, sequencing info 29559	

Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_29562	EGY/3/2016	cattle	100.0	0	A	AFRICA	G-IV	
viba_25918	ETH/19/2015	bovine	97.6	0	A	AFRICA	G-IV	
viba_17216	SUD/12/2011	cattle	88.2	0	A	AFRICA	G-IV	
viba_17207	SUD/12/2011	cattle	88.2	0	A	AFRICA	G-IV	
viba_28308	CAR/P19/2000 mfa/057/01		88.2	0	A	AFRICA	G-IV	
viba_17222	SUD/12/2011	cattle	88.2	0	A	AFRICA	G-IV	
viba_17225	SUD/12/2011	cattle	88.2	0	A	AFRICA	G-IV	
viba_17195	SUD/13/2011	cattle	88.0	0	A	AFRICA	G-IV	
viba_17219	SUD/1/2011	cattle	88.0	0	A	AFRICA	G-IV	
viba_8324	SUD/3/2006	cattle	88.0	0	A	AFRICA	G-IV	

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_178	SUD/3/77		84.8	0	A	AFRICA	G-IV	
viba_347	KEN/42/66		84.0	0	A	AFRICA	G-I	
viba_535	NGR/2/73	bovine	83.0	0	A	AFRICA	G-V	
viba_609	GHA/16/73	bovine	82.2	0	A	AFRICA	G-VI	
viba_688	EGY/1/72	bovine	81.9	0	A	AFRICA	G-II	
viba_785	KEN/3/64		81.5	0	A	AFRICA	G-III	
viba_699	UKG/119/32		80.4	0	A	EURO-SA	A12	
viba_173	UGA/13/66	bovine	80.2	0	A	AFRICA	G-VII	
viba_217	Cruzeiro/BRA/55	bovine	79.7	0	A	EURO-SA	A24	
viba_475	IRN/22/99		79.4	0	A	ASIA	Iran-99	

Virus sample name:	EGY/3/2016
Sender reference:	16. RL /488
Location of origin:	Sendeoin, Fowa, Kafr el-Sheikh
Country of origin:	Egypt
Date of collection:	11/01/2016
Host species:	cattle
Serotype:	A
Topotype:	AFRICA
Lineage:	G-IV
Sublineage:	
Sequence length:	633
Ambiguities:	0
Material submitted for sequencing:	BTy2
Harvest date of material:	15/07/2016
Primers:	A-1C562F/EUR-2B52R; A-1C612F/EUR-2B52R
Received for sequencing:	29/07/2016
Created:	01/08/2016
Last updated:	01/08/2016
VIBASys IDs: sample 29560, genome 29561, sequence viba_29562, sequencing info 29563	

Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_29558	EGY/8/2015	cattle	100.0	0	A	AFRICA	G-IV	
viba_25918	ETH/19/2015	bovine	97.6	0	A	AFRICA	G-IV	
viba_17216	SUD/12/2011	cattle	88.2	0	A	AFRICA	G-IV	
viba_17207	SUD/12/2011	cattle	88.2	0	A	AFRICA	G-IV	
viba_28308	CAR/P19/2000 mfa/057/01		88.2	0	A	AFRICA	G-IV	
viba_17222	SUD/12/2011	cattle	88.2	0	A	AFRICA	G-IV	
viba_17225	SUD/12/2011	cattle	88.2	0	A	AFRICA	G-IV	
viba_17195	SUD/13/2011	cattle	88.0	0	A	AFRICA	G-IV	
viba_17219	SUD/1/2011	cattle	88.0	0	A	AFRICA	G-IV	
viba_8324	SUD/3/2006	cattle	88.0	0	A	AFRICA	G-IV	

Most Closely Related Prototype Sequences

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sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_178	SUD/3/77		84.8	0	A	AFRICA	G-IV	
viba_347	KEN/42/66		84.0	0	A	AFRICA	G-I	
viba_535	NGR/2/73	bovine	83.0	0	A	AFRICA	G-V	
viba_609	GHA/16/73	bovine	82.2	0	A	AFRICA	G-VI	
viba_688	EGY/1/72	bovine	81.9	0	A	AFRICA	G-II	
viba_785	KEN/3/64		81.5	0	A	AFRICA	G-III	
viba_699	UKG/119/32		80.4	0	A	EURO-SA	A12	
viba_173	UGA/13/66	bovine	80.2	0	A	AFRICA	G-VII	
viba_217	Cruzeiro/BRA/55	bovine	79.7	0	A	EURO-SA	A24	
viba_475	IRN/22/99		79.4	0	A	ASIA	Iran-99	

Report on FMDV A in Egypt in 2015, 2016

Batch: WRLFMD/2016/00024



Sequence alignment method: muscle (default parameters)
 Phylogeny reconstruction method: fdnadist, fneighbor
 Number of bootstrap samples: 1000
 Displaying bootstrap values above: 70.0%
 Number of sequences in tree capped at: 100
 *, not a WRLFMD Reference Number

Sequences in the Phylogenetic Tree

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

label	accession	host(s)	lab	country	taxonomic information
EGY/3/2016	n/a	cattle	WRLFMD	Egypt	AFRICA/G-IV
EGY/8/2015	n/a	cattle	WRLFMD	Egypt	AFRICA/G-IV
ETH/19/2015	n/a	bovine	WRLFMD	Ethiopia	AFRICA/G-IV
SUD/1/2013	n/a	cattle	WRLFMD	Sudan	AFRICA/G-IV
SUD/13/2013	n/a	cattle	WRLFMD	Sudan	AFRICA/G-IV
SUD/12/2013	n/a	cattle	WRLFMD	Sudan	AFRICA/G-IV
SUD/11/2013	n/a	cattle	WRLFMD	Sudan	AFRICA/G-IV
SUD/10/2013	n/a	cattle	WRLFMD	Sudan	AFRICA/G-IV
ERI/40/2009	n/a	cattle	WRLFMD	Eritrea	AFRICA/G-IV
SUD/1/2006	GU566069	cattle	WRLFMD	Sudan	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
ERI/5/2006	n/a	cattle	WRLFMD	Eritrea	AFRICA/G-IV
ERI/16/2009	n/a	cattle	WRLFMD	Eritrea	AFRICA/G-IV
ERI/1/2006	KX258046	cattle	WRLFMD	Eritrea	AFRICA/G-IV
ERI/5/2008	n/a	cattle	WRLFMD	Eritrea	AFRICA/G-IV
SUD/3/2006	GU566070	cattle	WRLFMD	Sudan	AFRICA/G-IV
SUD/1/2011	n/a	cattle	WRLFMD	Sudan	AFRICA/G-IV
SUD/1/2011	n/a	cattle	WRLFMD	Sudan	AFRICA/G-IV
SUD/1/2011	n/a	cattle	WRLFMD	Sudan	AFRICA/G-IV
SUD/6/2011	n/a	cattle	WRLFMD	Sudan	AFRICA/G-IV
SUD/7/2011	n/a	cattle	WRLFMD	Sudan	AFRICA/G-IV
SUD/7/2011	n/a	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
EGY/30/2012	n/a	cattle	WRLFMD	Egypt	AFRICA/G-IV
EGY/42/2012	n/a	cattle	WRLFMD	Egypt	AFRICA/G-IV
EGY/1/2012	n/a	n/a	WRLFMD	Egypt	AFRICA/G-IV
SUD/13/2011	n/a	cattle	WRLFMD	Sudan	AFRICA/G-IV
SUD/12/2011	n/a	cattle	WRLFMD	Sudan	AFRICA/G-IV
SUD/12/2011	n/a	cattle	WRLFMD	Sudan	AFRICA/G-IV
SUD/12/2011	n/a	cattle	WRLFMD	Sudan	AFRICA/G-IV
SUD/12/2011	n/a	cattle	WRLFMD	Sudan	AFRICA/G-IV
CAR/38/2012	KX266276	bovine	WRLFMD	Cameroon	AFRICA/G-IV
CAR/70/2012	KX266281	bovine	WRLFMD	Cameroon	AFRICA/G-IV
CAR/63/2012	KX266280	bovine	WRLFMD	Cameroon	AFRICA/G-IV
CAR/72/2012	KX266282	bovine	WRLFMD	Cameroon	AFRICA/G-IV
CAR/34/2012	KX266275	bovine	WRLFMD	Cameroon	AFRICA/G-IV
TOG/9/2005	KX258062	cattle	n/a	Togo	AFRICA/G-IV
MAI/4/2004	KX258047	cattle	n/a	Mali	AFRICA/G-IV
MAI/12/2006	KX258048	n/a	WRLFMD	Mali	AFRICA/G-IV
CAR/14/2000	n/a	n/a	WRLFMD	Cameroon	AFRICA/G-IV
CAR/15/2000	EF208755	n/a	WRLFMD	Cameroon	AFRICA/G-IV
CAR/12/2000	KX258130	n/a	WRLFMD	Cameroon	AFRICA/G-IV
CAR/13/2000	KX258131	n/a	WRLFMD	Cameroon	AFRICA/G-IV
CAR/13/2000	n/a	n/a	WRLFMD	Cameroon	AFRICA/G-IV
CAR/14/2000	KX258132	n/a	WRLFMD	Cameroon	AFRICA/G-IV
CAR/12/2000	n/a	n/a	WRLFMD	Cameroon	AFRICA/G-IV
CAR/P19/2000 mfa/057/01*	n/a	n/a	WRLFMD	Cameroon	AFRICA/G-IV
NIG/10/2012	KX258056	bovine	WRLFMD	Nigeria	AFRICA/G-IV
NIG/12/2012	KX258057	bovine	WRLFMD	Nigeria	AFRICA/G-IV
NIG/36/2009	KX258050	cattle	WRLFMD	Nigeria	AFRICA/G-IV
NIG/38/2009	KX258051	cattle	WRLFMD	Nigeria	AFRICA/G-IV
NIG/39/2009	KX258052	cattle	WRLFMD	Nigeria	AFRICA/G-IV
CAR/P22/2000 fke/066/08*	n/a	n/a	WRLFMD	Cameroon	AFRICA/G-IV
ERI/3/98	KX258045	n/a	WRLFMD	Eritrea	AFRICA/G-IV
ERI/3/98	n/a	n/a	WRLFMD	Eritrea	AFRICA/G-IV
ERI/2/98	KX258044	n/a	WRLFMD	Eritrea	AFRICA/G-IV
ERI/2/98	n/a	n/a	WRLFMD	Eritrea	AFRICA/G-IV
ERI/3/97	KX258043	n/a	WRLFMD	Eritrea	AFRICA/G-IV

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label	accession	host(s)	lab	country	taxonomic information
ERI/3/97	n/a	n/a	WRLFMD	Eritrea	AFRICA/G-IV
SUD/3/77	GU566064	n/a	WRLFMD	Sudan	AFRICA/G-IV
SUD/1/81	GU566065	n/a	WRLFMD	Sudan	AFRICA/G-IV
SUD/2/84	GU566067	n/a	WRLFMD	Sudan	AFRICA/G-IV
SUD/1/85	GU566068	n/a	WRLFMD	Sudan	AFRICA/G-IV
NGR/2/73	KF561704	bovine	WRLFMD	Niger	AFRICA/G-V
GHA/16/73	KF561698	bovine	WRLFMD	Ghana	AFRICA/G-VI
EGY/1/72	EF208756	bovine	WRLFMD	Egypt	AFRICA/G-II
KEN/3/64	AY593761	n/a	PIADC	Kenya	AFRICA/G-III
KEN/42/66	KF561699	n/a	WRLFMD	Kenya	AFRICA/G-I
UGA/13/66	KF561705	bovine	WRLFMD	Uganda	AFRICA/G-VII
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
Bangkok/TAI/60*	AY593755	n/a	PIADC	Thailand	ASIA/A15
IRN/9/2010	n/a	cattle	WRLFMD	Iran	ASIA/Iran-05/ESF-10
IRN/1/2011	n/a	bovine	WRLFMD	Iran	ASIA/Iran-05/FAR-11
IRN/15/2012	n/a	bovine	WRLFMD	Iran	ASIA/Iran-05/SIS-12
IRN/125/2010	n/a	bovine	WRLFMD	Iran	ASIA/Iran-05/SIS-10
IRN/78/2009	n/a	bovine	WRLFMD	Iran	ASIA/Iran-05/FAR-09
BAR/6/2008	FJ755010	bovine	WRLFMD	Bahrain	ASIA/Iran-05/BAR-08
TUR/1/2008	FJ755133	cattle	WRLFMD	Turkey	ASIA/Iran-05/ARD-07
AFG/6/2007	FJ755007	bovine	WRLFMD	Afghanistan	ASIA/Iran-05/AFG-07
IRN/1/2005	EF208769	cattle	WRLFMD	Iran	ASIA/Iran-05
TUR/33/2008	FJ755155	cattle	WRLFMD	Turkey	ASIA/Iran-05/EZM-07
AFG/10/2010	n/a	n/a	WRLFMD	Afghanistan	ASIA/Iran-05/HER-10
IRN/9/2011	n/a	bovine	WRLFMD	Iran	ASIA/Iran-05/QAZ-11
TUR/3/2010	n/a	cattle	WRLFMD	Turkey	ASIA/Iran-05/KSS-09
IRN/2/87	EF208770	bovine	WRLFMD	Iran	ASIA/Iran-87
TAI/118/87*	EF208777	n/a	WRLFMD	Thailand	ASIA/Thai-87
TAI/7/2003	HQ116312	bovine	WRLFMD	Thailand	ASIA/Sea-97
TAI/2/97	EF208778	n/a	WRLFMD	Thailand	ASIA/Sea-97
IRN/1/96	EF208771	bovine	WRLFMD	Iran	ASIA/Iran-96
IND/40/2000*	AF390646	cattle	PD-FMD	India	ASIA/G-VII
SAU/16/95	EU553874	n/a	WRLFMD	Saudi Arabia	ASIA/G-VII
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