

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

Genotyping Report

FMDV serotype: SAT2
Country: Egypt
Year: 2017
Batch: WRLMEG/2018/00004
No. of sequences: 3
Report date: 16th January 2018
Report generated by: Nick Knowles
Report checked by: Kasia Bankowska



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Sequences were retrieved from GenBank on 15/01/2018.

They were submitted to GenBank on the 09/06/2017 by Soltan, M.A., Bazid, A., Mandour, M.F., Wasfy, M. and El-Sayed, M., Research and Development, Middle East Vaccine company (MEVAC), 20, Joseph Tito St., El Nozha El Gededa., Heliopolis, Cairo. 11111, Egypt.

Virus sample name:	Daqahlia 1/Egy/2017
Sender reference:	Daqahlia1/Egy/2017
Location of origin:	Daqahlia
Country of origin:	Egypt
Date of collection:	2017
Host species:	
Serotype:	SAT2
Topotype:	VII
Lineage:	Alx-12
Sublineage:	
Sequence length:	642
Ambiguities:	0
Material submitted for sequencing:	n/a
Harvest date of material:	n/a
Primers:	n/a
Received for sequencing:	n/a
Created:	15/01/2018
Last updated:	15/01/2018
VIBASys IDs: sample 35475, genome 35476, sequence viba_35477, sequencing info 35478	

Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_35485	Fayoum 1/Egy/2017		98.9	0	SAT2	VII	Alx-12	
viba_29815	SUD/5/2013	cattle	97.2	0	SAT2	VII	Alx-12	
viba_29827	SUD/7/2014	cattle	97.2	0	SAT2	VII	Alx-12	
viba_23602	EGY/20/2014	cattle	97.0	0	SAT2	VII	Alx-12	
viba_29819	SUD/9/2013	cattle	97.0	0	SAT2	VII	Alx-12	
viba_23606	EGY/22/2014	cattle	97.0	0	SAT2	VII	Alx-12	
viba_23610	EGY/24/2014	cattle	97.0	0	SAT2	VII	Alx-12	
viba_29831	SUD/11/2014	cattle	96.9	0	SAT2	VII	Alx-12	
viba_23598	EGY/11/2014	cattle	96.7	0	SAT2	VII	Alx-12	
viba_29823	SUD/4/2014	cattle	96.4	0	SAT2	VII	Alx-12	

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_424	SAU/6/2000	bovine	90.8	1	SAT2	VII		
viba_742	CAR/8/2005	cattle	87.0	0	SAT2	VII		
viba_127	KEN/3/57		74.7	0	SAT2	IX		
viba_470	KEN/2/84	bovine	74.7	0	SAT2	IX		
viba_456	ZAI/1/82	bovine	73.8	1	SAT2	X		
viba_756	UGA/19/98		73.2	0	SAT2	X		
viba_193	SUD/6/77		73.2	0	SAT2	XIII		
viba_248	KEN/1/84	bovine	73.1	0	SAT2	IV		
viba_189	RWA/1/2000		72.9	0	SAT2	VIII		
viba_369	UGA/51/75	bovine	72.9	0	SAT2	XII		

Virus sample name:	Daqahlia 2/Egy/2017
Sender reference:	Daqahlia2/Egy/2017
Location of origin:	Daqahlia
Country of origin:	Egypt
Date of collection:	2017
Host species:	
Serotype:	SAT2
Topotype:	VII
Lineage:	Alx-12
Sublineage:	
Sequence length:	642
Ambiguities:	0
Material submitted for sequencing:	n/a
Harvest date of material:	n/a
Primers:	n/a
Received for sequencing:	n/a
Created:	15/01/2018
Last updated:	15/01/2018
VIBASys IDs: sample 35479, genome 35480, sequence viba_35481, sequencing info 35482	

Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_29659	EGY/5/2015	cattle	98.6	0	SAT2	VII	Alx-12	
viba_29811	SUD/3/2013	cattle	95.3	0	SAT2	VII	Alx-12	
viba_23610	EGY/24/2014	cattle	95.3	0	SAT2	VII	Alx-12	
viba_29815	SUD/5/2013	cattle	95.2	0	SAT2	VII	Alx-12	
viba_29827	SUD/7/2014	cattle	95.2	0	SAT2	VII	Alx-12	
viba_29823	SUD/4/2014	cattle	95.2	0	SAT2	VII	Alx-12	
viba_23602	EGY/20/2014	cattle	95.0	0	SAT2	VII	Alx-12	
viba_29819	SUD/9/2013	cattle	95.0	0	SAT2	VII	Alx-12	
viba_23606	EGY/22/2014	cattle	95.0	0	SAT2	VII	Alx-12	
viba_29831	SUD/11/2014	cattle	94.9	0	SAT2	VII	Alx-12	

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_424	SAU/6/2000	bovine	91.3	1	SAT2	VII		
viba_742	CAR/8/2005	cattle	87.1	0	SAT2	VII		
viba_127	KEN/3/57		74.5	0	SAT2	IX		
viba_456	ZAI/1/82	bovine	74.5	1	SAT2	X		
viba_470	KEN/2/84	bovine	74.4	0	SAT2	IX		
viba_369	UGA/51/75	bovine	73.3	0	SAT2	XII		
viba_273	ETH/1/90	bovine	73.2	0	SAT2	IV		
viba_724	ETH/2/91	bovine	72.9	0	SAT2	XIV		
viba_756	UGA/19/98		72.7	0	SAT2	X		
viba_374	ZAI/1/74		72.4	0	SAT2	VIII		

Virus sample name:	Fayoum 1/Egy/2017
Sender reference:	Fayoum1/Egy/2017
Location of origin:	Fayoum
Country of origin:	Egypt
Date of collection:	2017
Host species:	
Serotype:	SAT2
Topotype:	VII
Lineage:	Alx-12
Sublineage:	
Sequence length:	642
Ambiguities:	0
Material submitted for sequencing:	n/a
Harvest date of material:	n/a
Primers:	n/a
Received for sequencing:	n/a
Created:	15/01/2018
Last updated:	15/01/2018
VIBASys IDs: sample 35483, genome 35484, sequence viba_35485, sequencing info 35486	

Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_35477	Daqahlia 1/Egy/2017		98.9	0	SAT2	VII	Alx-12	
viba_29815	SUD/5/2013	cattle	96.7	0	SAT2	VII	Alx-12	
viba_29827	SUD/7/2014	cattle	96.7	0	SAT2	VII	Alx-12	
viba_23602	EGY/20/2014	cattle	96.6	0	SAT2	VII	Alx-12	
viba_29819	SUD/9/2013	cattle	96.6	0	SAT2	VII	Alx-12	
viba_23606	EGY/22/2014	cattle	96.6	0	SAT2	VII	Alx-12	
viba_23610	EGY/24/2014	cattle	96.6	0	SAT2	VII	Alx-12	
viba_29831	SUD/11/2014	cattle	96.4	0	SAT2	VII	Alx-12	
viba_23598	EGY/11/2014	cattle	96.3	0	SAT2	VII	Alx-12	
viba_29823	SUD/4/2014	cattle	96.0	0	SAT2	VII	Alx-12	

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_424	SAU/6/2000	bovine	90.3	1	SAT2	VII		
viba_742	CAR/8/2005	cattle	86.8	0	SAT2	VII		
viba_470	KEN/2/84	bovine	74.4	0	SAT2	IX		
viba_127	KEN/3/57		74.1	0	SAT2	IX		
viba_456	ZAI/1/82	bovine	73.2	1	SAT2	X		
viba_189	RWA/1/2000		73.1	0	SAT2	VIII		
viba_369	UGA/51/75	bovine	73.1	0	SAT2	XII		
viba_193	SUD/6/77		72.9	0	SAT2	XIII		
viba_756	UGA/19/98		72.8	0	SAT2	X		
viba_248	KEN/1/84	bovine	72.4	0	SAT2	IV		

Report on FMDV SAT2 in Egypt in 2017

Batch: WRLMEG/2018/00004



*, not a WRLFMD Reference Number

Analysis Parameters

VP1 subsequence extractor:	vp1_SAT2
Query sequence set:	WRLMEG/2018/00004-Egypt-SAT2 (3 sequences)
Sequence database set:	allseqs_SAT2 (855 sequences)
Prototype sequence set:	!prototypes_SAT2 (25 sequences)
Number of related sequences reported:	10
Minimal VP1 subsequence match length	600
Sequence alignment method:	muscle (default parameters)
Sequence alignment length:	642
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:	13
VIBASys version:	reflabs-1.1.2

Sequences in the Phylogenetic Tree

All sequences in the tree are in taxonomic group FMDV/SAT2

label	accession	host(s)	lab	country	taxonomic information
Daqahlia 2/Egy/2017*	MF322695	n/a	MEVAC	Egypt	VII/Alx-12
EGY/5/2015	n/a	cattle	WRLFMD	Egypt	VII/Alx-12
Fayoum 1/Egy/2017*	MF322696	n/a	MEVAC	Egypt	VII/Alx-12
Daqahlia 1/Egy/2017*	MF322694	n/a	MEVAC	Egypt	VII/Alx-12
SUD/3/2013	n/a	cattle	WRLFMD	Sudan	VII/Alx-12
SUD/4/2014	n/a	cattle	WRLFMD	Sudan	VII/Alx-12
SUD/11/2014	n/a	cattle	WRLFMD	Sudan	VII/Alx-12
EGY/11/2014	KX258064	cattle	WRLFMD	Egypt	VII/Alx-12
EGY/20/2014	KX258065	cattle	WRLFMD	Egypt	VII/Alx-12
EGY/22/2014	KX258066	cattle	WRLFMD	Egypt	VII/Alx-12
EGY/24/2014	KX258067	cattle	WRLFMD	Egypt	VII/Alx-12
SUD/9/2013	n/a	cattle	WRLFMD	Sudan	VII/Alx-12
SUD/7/2014	n/a	cattle	WRLFMD	Sudan	VII/Alx-12
SUD/5/2013	n/a	cattle	WRLFMD	Sudan	VII/Alx-12
ETH/21/2014	KX258069	bovine	WRLFMD	Ethiopia	VII/Alx-12
ETH/19/2014	KX258068	bovine	WRLFMD	Ethiopia	VII/Alx-12
ETH/2/2015	KX258071	cattle	WRLFMD	Ethiopia	VII/Alx-12
ETH/10/2015	n/a	caprine	WRLFMD	Ethiopia	VII/Alx-12
ETH/14/2015	n/a	bovine	WRLFMD	Ethiopia	VII/Alx-12
ETH/7/2015	n/a	bovine	WRLFMD	Ethiopia	VII/Alx-12
OMN/4/2015	n/a	cattle	WRLFMD	Oman	VII/Alx-12
OMN/2/2015	n/a	cattle	WRLFMD	Oman	VII/Alx-12
OMN/3/2015	n/a	cattle	WRLFMD	Oman	VII/Alx-12
ETH/15/2015	n/a	bovine	WRLFMD	Ethiopia	VII/Alx-12
ETH/16/2015	n/a	bovine	WRLFMD	Ethiopia	VII/Alx-12
ETH/22/2014	KX258070	bovine	WRLFMD	Ethiopia	VII/Alx-12
ETH/20/2015	n/a	bovine	WRLFMD	Ethiopia	VII/Alx-12
ETH/18/2015	n/a	bovine	WRLFMD	Ethiopia	VII/Alx-12
SUD/4/2010	KF112968	cattle	WRLFMD	Sudan	VII/Alx-12
EGY/2/2012	JX570617	n/a	WRLFMD	Egypt	VII/Alx-12
ERI/4/98	AY343934	n/a	OVI	Eritrea	VII
ERI/1/98	AY343933	n/a	OVI	Eritrea	VII
ERI/11/98	n/a	bovine	WRLFMD	Eritrea	VII
ERI/12/98	AF367126	n/a	OVI	Eritrea	VII
CAR/P12/2000 VDI_44/1*	HM211082	n/a	WRLFMD	Cameroon	VII
SAU/6/2000	AF367135	bovine	OVI	Saudi Arabia	VII

continued on next page

label	accession	host(s)	lab	country	taxonomic information
Nig-sample-5*	n/a	n/a	ANSES	Nigeria	VII
NIG/16/2011	KX258092	bovine	WRLFMD	Nigeria	VII
NIG/17/2011	KX258093	bovine	WRLFMD	Nigeria	VII
Nig/5/13*	MF624360	bovine	CODA- CERVA	Nigeria	VII
Nig-sample-8*	n/a	n/a	ANSES	Nigeria	VII
NIG/5/2011	KX258084	bovine	WRLFMD	Nigeria	VII
NIG/6/2011	KX258085	bovine	WRLFMD	Nigeria	VII
Nig-sample-6*	n/a	n/a	ANSES	Nigeria	VII
Nig/3/13*	MF624358	bovine	CODA- CERVA	Nigeria	VII
SEN/27/2009	KF112967	cattle	WRLFMD	Senegal	VII
LIB/1/2003	JX570631	n/a	WRLFMD	Libya	VII/Lib-03
LIB/7/2003	JX570632	n/a	WRLFMD	Libya	VII/Lib-03
NIG/9/2011	KX258088	bovine	WRLFMD	Nigeria	VII
NIG/2/2008	KX258077	cattle	WRLFMD	Nigeria	VII
NIG/3/2008	KX258078	cattle	WRLFMD	Nigeria	VII
NIG/4/2008	KX258079	cattle	WRLFMD	Nigeria	VII
CAR/8/2005	JX570616	cattle	WRLFMD	Cameroon	VII
CAR/48/2005	KX258152	cattle	WRLFMD	Cameroon	VII
CAR/47/2005	KX258151	cattle	WRLFMD	Cameroon	VII
CAR/50/2005	KX258153	cattle	WRLFMD	Cameroon	VII
CAR/104/2005	KX258176	cattle	WRLFMD	Cameroon	VII
CAR/75/2005	KX258165	cattle	WRLFMD	Cameroon	VII
CAR/12/2005	KX258140	cattle	WRLFMD	Cameroon	VII
CAR/42/2013	n/a	cattle	WRLFMD	Cameroon	VII
CAR/24/2013	n/a	cattle	WRLFMD	Cameroon	VII
CAR/29/2013	n/a	cattle	WRLFMD	Cameroon	VII
CAR/6/2013	n/a	cattle	WRLFMD	Cameroon	VII
CAR/43/2013	n/a	cattle	WRLFMD	Cameroon	VII
EGY/11/2012	JX570624	n/a	WRLFMD	Egypt	VII/Ghb-12
EGY/9/2012	JX570622	n/a	WRLFMD	Egypt	VII/Ghb-12
EGY/43/2012	KX258063	cattle	WRLFMD	Egypt	VII/Ghb-12
EGY/44/2012	n/a	cattle	WRLFMD	Egypt	VII/Ghb-12
EGY/28/2012	KF112935	cattle	WRLFMD	Egypt	VII/Ghb-12
EGY/13/2012	JX570625	n/a	WRLFMD	Egypt	VII/Ghb-12
EGY/3/2012	JX570618	n/a	WRLFMD	Egypt	VII/Ghb-12
EGY/17/2012	KF112932	water buffalo	WRLFMD	Egypt	VII/Ghb-12
EGY/16/2012	KF112931	water buffalo	WRLFMD	Egypt	VII/Ghb-12
EGY/14/2012	JX570626	n/a	WRLFMD	Egypt	VII/Ghb-12
EGY/6/2012	JX570621	n/a	WRLFMD	Egypt	VII/Ghb-12
EGY/23/2012*	JX013980	cattle	n/a	Egypt	VII/Ghb-12
EGY/22/2012	KF112934	cattle	WRLFMD	Egypt	VII/Ghb-12
EGY/26/2012a*	JX013979	water buffalo	n/a	Egypt	VII/Ghb-12
EGY/10/2012	JX570623	n/a	WRLFMD	Egypt	VII/Ghb-12
EGY/29/2012	KF112936	cattle	WRLFMD	Egypt	VII/Ghb-12
PAT/1/2012	JX570637	cattle	WRLFMD	Palestinian AT	VII/Ghb-12
EGY/15/2012	JX570627	n/a	WRLFMD	Egypt	VII/Ghb-12
EGY/5/2012	JX570620	n/a	WRLFMD	Egypt	VII/Ghb-12
EGY/4/2012	JX570619	n/a	WRLFMD	Egypt	VII/Ghb-12
EGY/31/2012	KF112937	cattle	WRLFMD	Egypt	VII/Ghb-12
EGY/7/2012*	JX013978	water buffalo	n/a	Egypt	VII/Ghb-12
EGY/21/2012	KF112933	cattle	WRLFMD	Egypt	VII/Ghb-12
ETH/2/91	AY343938	bovine	OVI	Ethiopia	XIV
SUD/6/77	AY343939	n/a	OVI	Sudan	XIII
ZAI/1/74	DQ009737	n/a	OVI	Zaire	VIII
RWA/1/2000*	AF367134	n/a	OVI	Rwanda	VIII
KEN/3/57	AJ251473	n/a	WRLFMD	Kenya	IX
KEN/2/84	AY343941	bovine	OVI	Kenya	IX
UGA/51/75	AY343963	bovine	OVI	Uganda	XII
ZAI/1/82	AF367100	bovine	OVI	Zaire	X
UGA/19/98	AY343969	n/a	OVI	Uganda	X
ETH/1/90	AY343935	bovine	OVI	Ethiopia	IV
KEN/1/84	AY344505	bovine	OVI	Kenya	IV

*, not a WRLFMD Reference Number

n/a, not available