

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

Genotyping Report

FMDV serotype: O
Country: Cote d'Ivoire
Year: 2018
Batch: WRLMEG/2019/00007
No. of sequences: 3
Report date: 16th January 2019
Report generated by: Nick Knowles
Report checked by: Jemma Wadsworth

This report has been prepared on behalf of the European Union Reference Laboratory (EURL), FAO Reference Centre & OIE Reference Laboratory for Foot-and-Mouth Disease chez Agence nationale de sécurité sanitaire – ANSES, Maisons-Alfort, Île-de-France, France and covers VP1 sequences submitted to the WRLFMD on 16/01/2019.



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Virus sample name:	CIV/18Z008483/18
Sender reference:	A4
Location of origin:	Bingerville
Country of origin:	Cote d'Ivoire
Date of collection:	30/06/2018
Host species:	porcine
Serotype:	O
Topotype:	EA-3
Lineage:	
Sublineage:	
Sequence length:	632
Ambiguities:	0
Material submitted for sequencing:	isolate
Harvest date of material:	n/a
Primers:	n/a
Received for sequencing:	n/a
Created:	16/01/2019
Last updated:	16/01/2019
VIBASys IDs: sample 38415, genome 38416, sequence viba_38417, sequencing info 38418	

Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_37575	SEN/4/2018	cattle	99.2	0	O	EA-3		
viba_37583	SEN/9/2018	cattle	99.2	0	O	EA-3		
viba_37530	MAU/18Z007128/18		99.2	0	O	EA-3		
viba_36938	ALG/1/2018	cattle	99.2	0	O	EA-3		
viba_37755	BKF/15/2018	cattle	99.1	0	O	EA-3		
viba_37526	MAU/18Z007127/18		99.1	0	O	EA-3		
viba_37256	GNA/18Z005587/18		99.1	0	O	EA-3		
viba_37534	MAU/18Z007129/18		99.1	0	O	EA-3		
viba_37567	SEN/1/2018	cattle	99.1	0	O	EA-3		
viba_36947	ALG/2/2018	cattle	99.1	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	88.5	0	O	EA-3		
viba_854	ETH/1/2007	cattle	85.6	0	O	EA-3		
viba_30238	MUR/19/2016	cattle	85.3	0	O	ME-SA	Ind-2001	e
viba_408	ETH/3/2004	cattle	85.3	0	O	EA-3		
viba_50	UGA/17/98		84.5	0	O	EA-4		
viba_285	UKG/35/2001	porcine	84.0	0	O	ME-SA	PanAsia	
viba_85	UGA/3/2002		84.0	0	O	EA-2		
viba_576	IND/R2/75		83.8	0	O	ME-SA		
viba_104	GHA/5/93	bovine	83.8	0	O	WA		
viba_766	IRN/31/2009	cattle	83.5	0	O	ME-SA	PanAsia-2	FAR-09

Virus sample name:	CIV/18Z008487/18
Sender reference:	P4
Location of origin:	Port-Bouet
Country of origin:	Cote d'Ivoire
Date of collection:	30/06/2018
Host species:	porcine
Serotype:	O
Topotype:	EA-3
Lineage:	
Sublineage:	
Sequence length:	633
Ambiguities:	0
Material submitted for sequencing:	isolate
Harvest date of material:	n/a
Primers:	n/a
Received for sequencing:	n/a
Created:	16/01/2019
Last updated:	16/01/2019
VIBASys IDs: sample 38419, genome 38420, sequence viba_38421, sequencing info 38422	

Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_37575	SEN/4/2018	cattle	99.8	0	O	EA-3		
viba_37583	SEN/9/2018	cattle	99.8	0	O	EA-3		
viba_37530	MAU/18Z007128/18		99.8	0	O	EA-3		
viba_36938	ALG/1/2018	cattle	99.8	0	O	EA-3		
viba_37755	BKF/15/2018	cattle	99.7	0	O	EA-3		
viba_37526	MAU/18Z007127/18		99.7	0	O	EA-3		
viba_37256	GNA/18Z005587/18		99.7	0	O	EA-3		
viba_37534	MAU/18Z007129/18		99.7	0	O	EA-3		
viba_37567	SEN/1/2018	cattle	99.7	0	O	EA-3		
viba_36947	ALG/2/2018	cattle	99.7	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	89.3	0	O	EA-3		
viba_854	ETH/1/2007	cattle	86.1	0	O	EA-3		
viba_408	ETH/3/2004	cattle	85.6	0	O	EA-3		
viba_50	UGA/17/98		85.4	0	O	EA-4		
viba_30238	MUR/19/2016	cattle	85.3	0	O	ME-SA	Ind-2001	e
viba_285	UKG/35/2001	porcine	84.3	0	O	ME-SA	PanAsia	
viba_523	K83/79		84.2	0	O	EA-1		
viba_85	UGA/3/2002		84.2	0	O	EA-2		
viba_576	IND/R2/75		83.9	0	O	ME-SA		
viba_104	GHA/5/93	bovine	83.9	0	O	WA		

Virus sample name:	CIV/18Z008489/18
Sender reference:	Az2
Location of origin:	Yopougon Azito
Country of origin:	Cote d'Ivoire
Date of collection:	30/06/2018
Host species:	porcine
Serotype:	O
Topotype:	EA-3
Lineage:	
Sublineage:	
Sequence length:	633
Ambiguities:	0
Material submitted for sequencing:	isolate
Harvest date of material:	n/a
Primers:	n/a
Received for sequencing:	n/a
Created:	16/01/2019
Last updated:	16/01/2019
VIBASys IDs: sample 38423, genome 38424, sequence viba_38425, sequencing info 38426	

Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_37558	GAM/1/2018	cattle	99.8	0	O	EA-3		
viba_37575	SEN/4/2018	cattle	99.8	0	O	EA-3		
viba_37583	SEN/9/2018	cattle	99.8	0	O	EA-3		
viba_37579	SEN/6/2018	cattle	99.8	0	O	EA-3		
viba_37530	MAU/18Z007128/18		99.8	0	O	EA-3		
viba_37562	GAM/2/2018	cattle	99.8	0	O	EA-3		
viba_36938	ALG/1/2018	cattle	99.8	0	O	EA-3		
viba_37755	BKF/15/2018	cattle	99.7	0	O	EA-3		
viba_37526	MAU/18Z007127/18		99.7	0	O	EA-3		
viba_37256	GNA/18Z005587/18		99.7	0	O	EA-3		

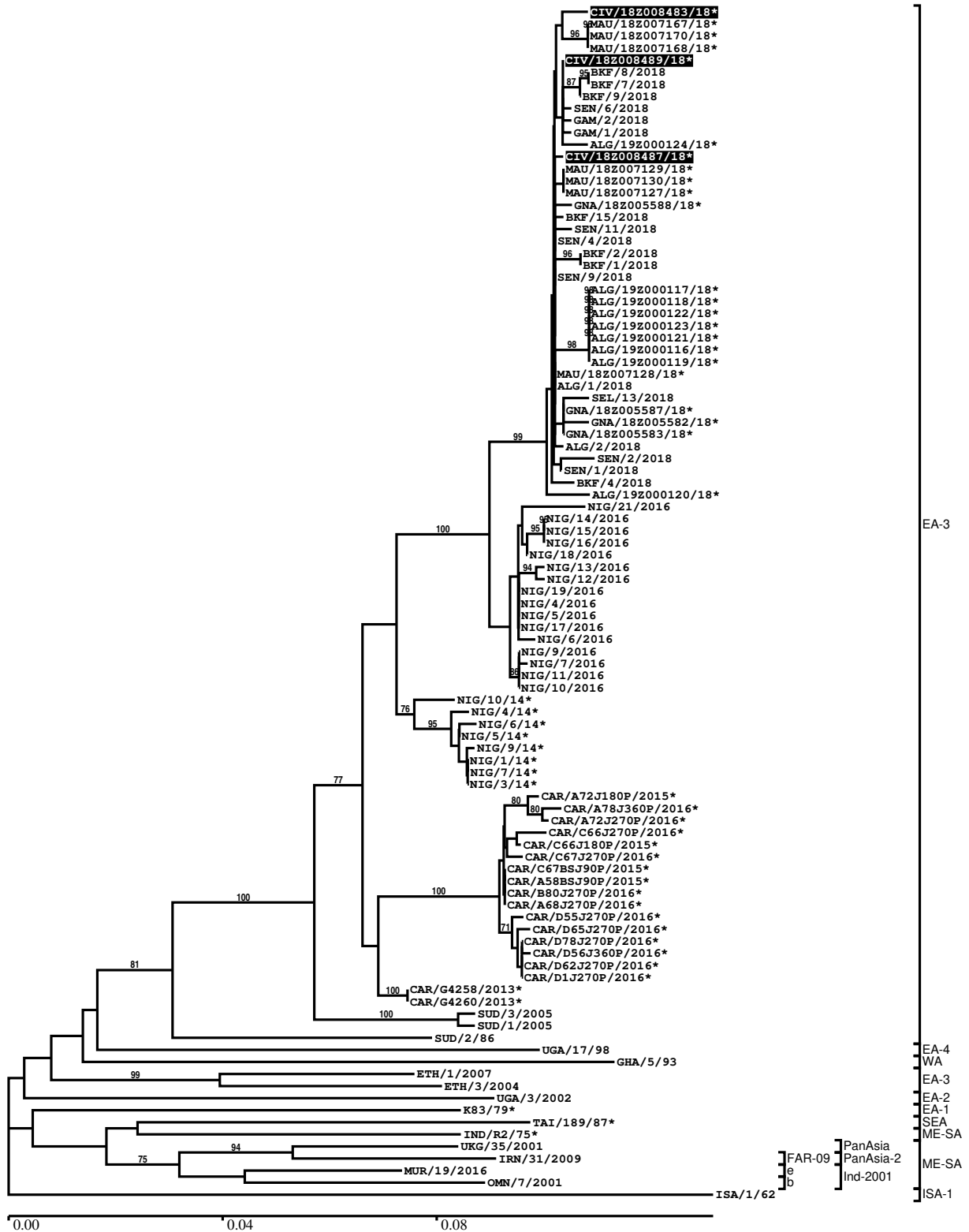
Most Closely Related Prototype Sequences

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	89.3	0	O	EA-3		
viba_854	ETH/1/2007	cattle	85.8	0	O	EA-3		
viba_30238	MUR/19/2016	cattle	85.6	0	O	ME-SA	Ind-2001	e
viba_408	ETH/3/2004	cattle	85.6	0	O	EA-3		
viba_50	UGA/17/98		85.1	0	O	EA-4		
viba_85	UGA/3/2002		84.5	0	O	EA-2		
viba_285	UKG/35/2001	porcine	84.3	0	O	ME-SA	PanAsia	
viba_576	IND/R2/75		84.2	0	O	ME-SA		
viba_523	K83/79		84.2	0	O	EA-1		
viba_541	OMN/7/2001	bovine	84.1	0	O	ME-SA	Ind-2001	b

Report on FMDV O in Cote d'Ivoire in 2018

Batch: WRLMEG/2019/00007



*, not a WRLFMD Reference Number

Analysis Parameters

VP1 subsequence extractor:	vp1_O
Query sequence set:	WRLMEG/2019/00007-Cote d'Ivoire-O (3 sequences)
Sequence database set:	allseqs_O (4054 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:	12
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
CIV/18Z008483/18*	n/a	porcine	ANSES	Cote d'Ivoire	EA-3
MAU/18Z007167/18*	n/a	n/a	ANSES	Mauritania	EA-3
MAU/18Z007170/18*	n/a	n/a	ANSES	Mauritania	EA-3
MAU/18Z007168/18*	n/a	n/a	ANSES	Mauritania	EA-3
CIV/18Z008489/18*	n/a	porcine	ANSES	Cote d'Ivoire	EA-3
BKF/8/2018	n/a	cattle	WRLFMD	Burkina Faso	EA-3
BKF/7/2018	n/a	cattle	WRLFMD	Burkina Faso	EA-3
BKF/9/2018	n/a	cattle	WRLFMD	Burkina Faso	EA-3
SEN/6/2018	n/a	cattle	WRLFMD	Senegal	EA-3
GAM/2/2018	n/a	cattle	WRLFMD	Gambia	EA-3
GAM/1/2018	n/a	cattle	WRLFMD	Gambia	EA-3
ALG/19Z000124/18*	n/a	caprine	ANSES	Algeria	EA-3
CIV/18Z008487/18*	n/a	porcine	ANSES	Cote d'Ivoire	EA-3
MAU/18Z007129/18*	n/a	n/a	ANSES	Mauritania	EA-3
MAU/18Z007130/18*	n/a	n/a	ANSES	Mauritania	EA-3
MAU/18Z007127/18*	n/a	n/a	ANSES	Mauritania	EA-3
GNA/18Z005588/18*	n/a	n/a	ANSES	Guinea	EA-3
BKF/15/2018	n/a	cattle	WRLFMD	Burkina Faso	EA-3
SEN/11/2018	n/a	cattle	WRLFMD	Senegal	EA-3
SEN/4/2018	n/a	cattle	WRLFMD	Senegal	EA-3
BKF/2/2018	n/a	cattle	WRLFMD	Burkina Faso	EA-3
BKF/1/2018	n/a	cattle	WRLFMD	Burkina Faso	EA-3
SEN/9/2018	n/a	cattle	WRLFMD	Senegal	EA-3
ALG/19Z000117/18*	n/a	bovine	ANSES	Algeria	EA-3
ALG/19Z000118/18*	n/a	bovine	ANSES	Algeria	EA-3
ALG/19Z000122/18*	n/a	caprine	ANSES	Algeria	EA-3
ALG/19Z000123/18*	n/a	caprine	ANSES	Algeria	EA-3
ALG/19Z000121/18*	n/a	caprine	ANSES	Algeria	EA-3
ALG/19Z000116/18*	n/a	bovine	ANSES	Algeria	EA-3
ALG/19Z000119/18*	n/a	bovine	ANSES	Algeria	EA-3
MAU/18Z007128/18*	n/a	n/a	ANSES	Mauritania	EA-3
ALG/1/2018	n/a	cattle	WRLFMD	Algeria	EA-3
SEL/13/2018	n/a	cattle	WRLFMD	Sierra Leone	EA-3
GNA/18Z005587/18*	n/a	n/a	ANSES	Guinea	EA-3
GNA/18Z005582/18*	n/a	n/a	ANSES	Guinea	EA-3
GNA/18Z005583/18*	n/a	n/a	ANSES	Guinea	EA-3

continued on next page

label	accession	host(s)	lab	country	taxonomic information
ALG/2/2018	n/a	cattle	WRLFMD	Algeria	EA-3
SEN/2/2018	n/a	porcine	WRLFMD	Senegal	EA-3
SEN/1/2018	n/a	cattle	WRLFMD	Senegal	EA-3
BKF/4/2018	n/a	cattle	WRLFMD	Burkina Faso	EA-3
ALG/19Z000120/18*	n/a	ovine	ANSES	Algeria	EA-3
NIG/21/2016	n/a	cattle	WRLFMD	Nigeria	EA-3
NIG/14/2016	n/a	cattle	WRLFMD	Nigeria	EA-3
NIG/15/2016	n/a	cattle	WRLFMD	Nigeria	EA-3
NIG/16/2016	n/a	cattle	WRLFMD	Nigeria	EA-3
NIG/18/2016	n/a	cattle	WRLFMD	Nigeria	EA-3
NIG/13/2016	n/a	cattle	WRLFMD	Nigeria	EA-3
NIG/12/2016	n/a	cattle	WRLFMD	Nigeria	EA-3
NIG/19/2016	n/a	cattle	WRLFMD	Nigeria	EA-3
NIG/4/2016	n/a	cattle	WRLFMD	Nigeria	EA-3
NIG/5/2016	n/a	cattle	WRLFMD	Nigeria	EA-3
NIG/17/2016	n/a	cattle	WRLFMD	Nigeria	EA-3
NIG/6/2016	n/a	cattle	WRLFMD	Nigeria	EA-3
NIG/9/2016	n/a	cattle	WRLFMD	Nigeria	EA-3
NIG/7/2016	n/a	sheep	WRLFMD	Nigeria	EA-3
NIG/11/2016	n/a	cattle	WRLFMD	Nigeria	EA-3
NIG/10/2016	n/a	cattle	WRLFMD	Nigeria	EA-3
NIG/10/14*	KY041874	bovine	CODA-CERVA	Nigeria	EA-3
NIG/4/14*	KY065153	bovine	CODA-CERVA	Nigeria	EA-3
NIG/6/14*	KY065155	bovine	CODA-CERVA	Nigeria	EA-3
NIG/5/14*	KY065154	bovine	CODA-CERVA	Nigeria	EA-3
NIG/9/14*	KY065152	bovine	CODA-CERVA	Nigeria	EA-3
NIG/1/14*	KY041876	bovine	CODA-CERVA	Nigeria	EA-3
NIG/7/14*	KY065151	bovine	CODA-CERVA	Nigeria	EA-3
NIG/3/14*	KY065150	bovine	CODA-CERVA	Nigeria	EA-3
CAR/A72J180P/2015*	MG873210	cattle	PIADC	Cameroon	EA-3
CAR/A78J360P/2016*	MG873212	cattle	PIADC	Cameroon	EA-3
CAR/A72J270P/2016*	MG873211	cattle	PIADC	Cameroon	EA-3
CAR/C66J270P/2016*	MG873215	cattle	PIADC	Cameroon	EA-3
CAR/C66J180P/2015*	MG873214	cattle	PIADC	Cameroon	EA-3
CAR/C67J270P/2016*	MG873217	cattle	PIADC	Cameroon	EA-3
CAR/C67BSJ90P/2015*	MG873216	cattle	PIADC	Cameroon	EA-3
CAR/A58BSJ90P/2015*	MG873208	cattle	PIADC	Cameroon	EA-3
CAR/B80J270P/2016*	MG873213	cattle	PIADC	Cameroon	EA-3
CAR/A68J270P/2016*	MG873209	cattle	PIADC	Cameroon	EA-3
CAR/D55J270P/2016*	MG873219	cattle	PIADC	Cameroon	EA-3
CAR/D65J270P/2016*	MG873222	cattle	PIADC	Cameroon	EA-3
CAR/D78J270P/2016*	MG873223	cattle	PIADC	Cameroon	EA-3
CAR/D56J360P/2016*	MG873220	cattle	PIADC	Cameroon	EA-3
CAR/D62J270P/2016*	MG873221	cattle	PIADC	Cameroon	EA-3
CAR/D1J270P/2016*	MG873218	cattle	PIADC	Cameroon	EA-3
CAR/G4258/2013*	KY581680	n/a	PIADC	Cameroon	EA-3
CAR/G4260/2013*	KY581679	n/a	PIADC	Cameroon	EA-3
SUD/3/2005	GU566058	cattle	WRLFMD	Sudan	EA-3
SUD/1/2005	GU566056	cattle	WRLFMD	Sudan	EA-3
SUD/2/86	DQ165075	bovine	WRLFMD	Sudan	EA-3
UGA/17/98	HM211075	n/a	WRLFMD	Uganda	EA-4
GHA/5/93	AJ303488	bovine	WRLFMD	Ghana	WA
ETH/1/2007	FJ798137	cattle	WRLFMD	Ethiopia	EA-3
ETH/3/2004	FJ798109	cattle	WRLFMD	Ethiopia	EA-3
UGA/3/2002	DQ165077	n/a	WRLFMD	Uganda	EA-2
K83/79*	AJ303511	n/a	WRLFMD	Kenya	EA-1
TAI/189/87*	KY091288	bovine	TRRL	Thailand	SEA
IND/R2/75*	AF204276	n/a	PD-FMD	India	ME-SA
UKG/35/2001	AJ539141	porcine	PIADC	United Kingdom	ME-SA/PanAsia
IRN/31/2009	KY091284	cattle	WRLFMD	Iran	ME-SA/PanAsia-2/FAR-09
MUR/19/2016	MG972510	cattle	WRLFMD	Mauritius	ME-SA/Ind-2001/e
OMN/7/2001	DQ164941	bovine	WRLFMD	Oman	ME-SA/Ind-2001/b
ISA/1/62	AJ303500	n/a	WRLFMD	Indonesia	ISA-1

*, not a WRLFMD Reference Number
n/a, not available