

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

## Genotyping Report

FMDV serotype: O  
Country: Cote d'Ivoire  
Year: 2018  
Batch: WRLFMD/2019/00015  
No. of sequences: 3  
Report date: 5th April 2019  
Report generated by: Nick Knowles  
Report checked by: Jemma Wadsworth



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Virus sample name:	CIV/1/2018
Sender reference:	O/CIV/18Z0008483/2018/190319i
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:	633
Ambiguities:	0
Material submitted for sequencing:	RS1
Harvest date of material:	29/03/2019
Primers:	O-1C244F/EUR-2B52R; FMD-3161F/FMD-4303R
Received for sequencing:	03/04/2019
Created:	05/04/2019
Last updated:	05/04/2019
VIBASys IDs: sample 41139, genome 41140, sequence viba_41141, sequencing info 41142	

### Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_38417	CIV/18Z008483/18	porcine	99.8	0	O	EA-3		
viba_37575	SEN/4/2018	cattle	99.4	0	O	EA-3		
viba_37583	SEN/9/2018	cattle	99.4	0	O	EA-3		
viba_36938	ALG/1/2018	cattle	99.4	0	O	EA-3		
viba_37530	MAU/18Z007128/18		99.4	0	O	EA-3		
viba_40791	GHA/Asu/12/2018	cattle	99.2	0	O	EA-3		
viba_37252	GNA/18Z005583/18		99.2	0	O	EA-3		
viba_37567	SEN/1/2018	cattle	99.2	0	O	EA-3		
viba_40787	GHA/Asu/11/2018	cattle	99.2	0	O	EA-3		
viba_37256	GNA/18Z005587/18		99.2	0	O	EA-3		

### Most Closely Related Prototype Sequences

see [http://www.wrlfmd.org/fmd\\_genotyping/prototypes.htm](http://www.wrlfmd.org/fmd_genotyping/prototypes.htm)

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_116	SUD/2/86	bovine	88.6	0	O	EA-3		
viba_854	ETH/1/2007	cattle	85.8	0	O	EA-3		
viba_408	ETH/3/2004	cattle	85.3	0	O	EA-3		
viba_30238	MUR/19/2016	cattle	85.3	0	O	ME-SA	Ind-2001	e
viba_50	UGA/17/98		84.6	0	O	EA-4		
viba_85	UGA/3/2002		84.2	0	O	EA-2		
viba_285	UKG/35/2001	porcine	84.0	0	O	ME-SA	PanAsia	
viba_104	GHA/5/93	bovine	83.9	0	O	WA		
viba_576	IND/R2/75		83.8	0	O	ME-SA		
viba_523	K83/79		83.6	0	O	EA-1		

Virus sample name:	CIV/2/2018
Sender reference:	O/CIV/18Z0008487/2018/190319i
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:	2
Material submitted for sequencing:	RS1
Harvest date of material:	29/03/2019
Primers:	O-1C244F/EUR-2B52R; FMD-3161F/FMD-4303R
Received for sequencing:	03/04/2019
Created:	05/04/2019
Last updated:	05/04/2019
VIBASys IDs: sample 41143, genome 41144, sequence viba_41145, sequencing info 41146	

#### Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_38421	CIV/18Z008487/18	porcine	99.7	0	O	EA-3		
viba_37575	SEN/4/2018	cattle	99.5	0	O	EA-3		
viba_37583	SEN/9/2018	cattle	99.5	0	O	EA-3		
viba_36938	ALG/1/2018	cattle	99.5	0	O	EA-3		
viba_37530	MAU/18Z007128/18		99.5	0	O	EA-3		
viba_40791	GHA/Asu/12/2018	cattle	99.4	0	O	EA-3		
viba_37252	GNA/18Z005583/18		99.4	0	O	EA-3		
viba_37567	SEN/1/2018	cattle	99.4	0	O	EA-3		
viba_40787	GHA/Asu/11/2018	cattle	99.4	0	O	EA-3		
viba_37256	GNA/18Z005587/18		99.4	0	O	EA-3		

#### Most Closely Related Prototype Sequences

see [http://www.wrlfmd.org/fmd\\_genotyping/prototypes.htm](http://www.wrlfmd.org/fmd_genotyping/prototypes.htm)

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_116	SUD/2/86	bovine	89.1	0	O	EA-3		
viba_854	ETH/1/2007	cattle	86.0	0	O	EA-3		
viba_408	ETH/3/2004	cattle	85.5	0	O	EA-3		
viba_30238	MUR/19/2016	cattle	85.2	0	O	ME-SA	Ind-2001	e
viba_50	UGA/17/98		85.2	0	O	EA-4		
viba_285	UKG/35/2001	porcine	84.1	0	O	ME-SA	PanAsia	
viba_85	UGA/3/2002		84.0	0	O	EA-2		
viba_523	K83/79		83.9	0	O	EA-1		
viba_576	IND/R2/75		83.8	0	O	ME-SA		
viba_104	GHA/5/93	bovine	83.6	0	O	WA		

Virus sample name:	CIV/3/2018
Sender reference:	O/CIV/18Z0008489/2018/190319i
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:	RS1
Harvest date of material:	29/03/2019
Primers:	O-1C244F/EUR-2B52R; FMD-3161F/FMD-4303R
Received for sequencing:	03/04/2019
Created:	05/04/2019
Last updated:	05/04/2019
VIBASys IDs: sample 41147, genome 41148, sequence viba_41149, sequencing info 41150	

### Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_38425	CIV/18Z008489/18	porcine	100.0	0	O	EA-3		
viba_37562	GAM/2/2018	cattle	99.8	0	O	EA-3		
viba_37579	SEN/6/2018	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_37558	GAM/1/2018	cattle	99.8	0	O	EA-3		
viba_36938	ALG/1/2018	cattle	99.8	0	O	EA-3		
viba_37530	MAU/18Z007128/18		99.8	0	O	EA-3		
viba_40791	GHA/Asu/12/2018	cattle	99.7	0	O	EA-3		
viba_37252	GNA/18Z005583/18		99.7	0	O	EA-3		

### Most Closely Related Prototype Sequences

see [http://www.wrlfmd.org/fmd\\_genotyping/prototypes.htm](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_408	ETH/3/2004	cattle	85.6	0	O	EA-3		
viba_30238	MUR/19/2016	cattle	85.6	0	O	ME-SA	Ind-2001	e
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_523	K83/79		84.2	0	O	EA-1		
viba_576	IND/R2/75		84.2	0	O	ME-SA		
viba_359	Manisa/TUR/69		84.1	0	O	ME-SA		

Report on FMDV O in Cote d'Ivoire in 2018

Batch: WRLFMD/2019/00015



\*, not a WRLFMD Reference Number

## Analysis Parameters

VP1 subsequence extractor: vp1\_O  
 Query sequence set: WRLFMD/2019/00015-Cote d'Ivoire-O (3 sequences)  
 Sequence database set: allseqs\_O (4429 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: 11  
 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/3/2018	n/a	porcine	WRLFMD	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
CIV/18Z008489/18*	n/a	porcine	ANSES	Cote d'Ivoire	EA-3
GAM/2/2018	n/a	cattle	WRLFMD	Gambia	EA-3
GAM/1/2018	n/a	cattle	WRLFMD	Gambia	EA-3
ALG/11/2018	n/a	n/a	WRLFMD	Algeria	EA-3
ALG/19Z000124/18*	n/a	caprine	ANSES	Algeria	EA-3
ALG/19Z000123/18*	n/a	caprine	ANSES	Algeria	EA-3
ALG/6/2018	n/a	cattle	WRLFMD	Algeria	EA-3
ALG/19Z000119/18*	n/a	bovine	ANSES	Algeria	EA-3
ALG/7/2018	n/a	cattle	WRLFMD	Algeria	EA-3
ALG/10/2018	n/a	sheep	WRLFMD	Algeria	EA-3
ALG/5/2018	n/a	cattle	WRLFMD	Algeria	EA-3
ALG/19Z000118/18*	n/a	bovine	ANSES	Algeria	EA-3
ALG/19Z000122/18*	n/a	caprine	ANSES	Algeria	EA-3
ALG/19Z000117/18*	n/a	bovine	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/12/2018	n/a	cattle	WRLFMD	Algeria	EA-3
TUN/19Z002374/19*	n/a	bovine	ANSES	Tunisia	EA-3
CIV/1/2018	n/a	porcine	WRLFMD	Cote d'Ivoire	EA-3
CIV/18Z008483/18*	n/a	porcine	ANSES	Cote d'Ivoire	EA-3
MAU/18Z007170/18*	n/a	n/a	ANSES	Mauritania	EA-3
MAU/18Z007168/18*	n/a	n/a	ANSES	Mauritania	EA-3
MAU/18Z007167/18*	n/a	n/a	ANSES	Mauritania	EA-3
CIV/2/2018	n/a	porcine	WRLFMD	Cote d'Ivoire	EA-3
CIV/18Z008487/18*	n/a	porcine	ANSES	Cote d'Ivoire	EA-3
MAU/18Z007130/18*	n/a	n/a	ANSES	Mauritania	EA-3
MAU/18Z007129/18*	n/a	n/a	ANSES	Mauritania	EA-3
MAU/1/2018	n/a	cattle	WRLFMD	Mauritania	EA-3
MAU/18Z007127/18*	n/a	n/a	ANSES	Mauritania	EA-3
BKF/15/2018	n/a	cattle	WRLFMD	Burkina Faso	EA-3
TUN/19Z002379/19*	n/a	bovine	ANSES	Tunisia	EA-3

*continued on next page*

label	accession	host(s)	lab	country	taxonomic information
TUN/1/2019	n/a	cattle	WRLFMD	Tunisia	EA-3
TUN/19Z002380/19*	n/a	bovine	ANSES	Tunisia	EA-3
BKF/4/2018	n/a	cattle	WRLFMD	Burkina Faso	EA-3
ALG/1/2018	n/a	cattle	WRLFMD	Algeria	EA-3
SEN/4/2018	n/a	cattle	WRLFMD	Senegal	EA-3
BKF/1/2018	n/a	cattle	WRLFMD	Burkina Faso	EA-3
BKF/2/2018	n/a	cattle	WRLFMD	Burkina Faso	EA-3
MAU/18Z007128/18*	n/a	n/a	ANSES	Mauritania	EA-3
SEN/9/2018	n/a	cattle	WRLFMD	Senegal	EA-3
GNA/3/2018	n/a	cattle	WRLFMD	Guinea	EA-3
GNA/18Z005582/18*	n/a	n/a	ANSES	Guinea	EA-3
SEL/13/2018	n/a	cattle	WRLFMD	Sierra Leone	EA-3
GNA/18Z005583/18*	n/a	n/a	ANSES	Guinea	EA-3
GNA/18Z005587/18*	n/a	n/a	ANSES	Guinea	EA-3
GNA/2/2018	n/a	cattle	WRLFMD	Guinea	EA-3
ALG/2/2018	n/a	cattle	WRLFMD	Algeria	EA-3
GHA/Asu/9/2018*	LC456870	cattle	NIAH-JAPAN	Ghana	EA-3
GHA/Asu/10/2018*	LC456871	cattle	NIAH-JAPAN	Ghana	EA-3
GHA/Asu/11/2018*	LC456872	cattle	NIAH-JAPAN	Ghana	EA-3
GHA/Asu/12/2018*	LC456873	cattle	NIAH-JAPAN	Ghana	EA-3
SEN/11/2018	n/a	cattle	WRLFMD	Senegal	EA-3
MOR/19Z01730/19*	n/a	bovine	ANSES	Morocco	EA-3
MOR/4/2019	n/a	cattle	WRLFMD	Morocco	EA-3
MOR/2/2019	n/a	cattle	WRLFMD	Morocco	EA-3
MOR/19Z01728/19*	n/a	bovine	ANSES	Morocco	EA-3
TUN/19Z002372/19*	n/a	bovine	ANSES	Tunisia	EA-3
TUN/1/2018	n/a	cattle	WRLFMD	Tunisia	EA-3
TUN/19Z002373/19*	n/a	bovine	ANSES	Tunisia	EA-3
SEN/2/2018	n/a	porcine	WRLFMD	Senegal	EA-3
SEN/1/2018	n/a	cattle	WRLFMD	Senegal	EA-3
TUN/19Z002378/19*	n/a	bovine	ANSES	Tunisia	EA-3
GNA/1/2018	n/a	cattle	WRLFMD	Guinea	EA-3
GNA/18Z005588/18*	n/a	n/a	ANSES	Guinea	EA-3
ALG/8/2018	n/a	cattle	WRLFMD	Algeria	EA-3
ALG/1/2019	n/a	cattle	WRLFMD	Algeria	EA-3
MOR/19Z01729/19*	n/a	bovine	ANSES	Morocco	EA-3
MOR/3/2019	n/a	cattle	WRLFMD	Morocco	EA-3
MOR/19Z01727/19*	n/a	bovine	ANSES	Morocco	EA-3
MOR/19Z00949/19*	n/a	bovine	ANSES	Morocco	EA-3
MOR/19Z00948/19*	n/a	bovine	ANSES	Morocco	EA-3
MOR/1/2019	n/a	cattle	WRLFMD	Morocco	EA-3
ALG/19Z000120/18*	n/a	ovine	ANSES	Algeria	EA-3
NIG/9/16b*	MH894429	cattle	PIADC	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/8/16b*	MH894428	cattle	PIADC	Nigeria	EA-3
NIG/19/2016	n/a	cattle	WRLFMD	Nigeria	EA-3
NIG/10/2016	n/a	cattle	WRLFMD	Nigeria	EA-3
NIG/9/2016	n/a	cattle	WRLFMD	Nigeria	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/3/2004	FJ798109	cattle	WRLFMD	Ethiopia	EA-3
ETH/1/2007	FJ798137	cattle	WRLFMD	Ethiopia	EA-3
UGA/3/2002	DQ165077	n/a	WRLFMD	Uganda	EA-2
TAI/189/87*	KY091288	bovine	TRRL	Thailand	SEA
UKG/35/2001	AJ539141	porcine	PIADC	United Kingdom	ME-SA/PanAsia
IND/R2/75*	AF204276	n/a	PD-FMD	India	ME-SA
Manisa/TUR/69*	AY593823	n/a	PIADC	Turkey	ME-SA
MUR/19/2016	MG972510	cattle	WRLFMD	Mauritius	ME-SA/Ind-2001/e
K83/79*	AJ303511	n/a	WRLFMD	Kenya	EA-1
ISA/1/62	AJ303500	n/a	WRLFMD	Indonesia	ISA-1

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