

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

## Genotyping Report

FMDV serotype: O  
Country: Libya  
Year: 2019  
Batch: WRLMEG/2019/00039  
No. of sequences: 1  
Report date: 12th August 2019  
Report generated by: Nick Knowles  
Report checked by: Antonello Di Nardo

This report has been prepared on behalf of the Istituto Zooprofilattico Sperimentale della Lombardia e dell'Emilia Romagna "Bruno Ubertini« (IZSLER), Brescia, Italy, and covers a VP1 sequence submitted to the WRLFMD on 12/08/2019.



Copyright ©2019 The Pirbright Institute, Ash Road, Pirbright, Woking GU24 0NF, United Kingdom.

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

email: [reporting@pirbright.ac.uk](mailto:reporting@pirbright.ac.uk)

The contents of this report should not be reproduced without permission.

Virus sample name:	LIB/Misrata/2019 (IZSLER/19/194010/2)
Sender reference:	O/LIB/Misrata/2019(IZSLER_19_194010/2)
Location of origin:	Misrata
Country of origin:	Libya
Date of collection:	05/2019
Host species:	cattle
Serotype:	O
Topotype:	EA-3
Lineage:	
Sublineage:	
Sequence length:	633
Ambiguities:	0
Material submitted for sequencing:	n/a
Harvest date of material:	n/a
Primers:	n/a
Received for sequencing:	n/a
Created:	12/08/2019
Last updated:	12/08/2019
VIBASys IDs: sample 42609, genome 42610, sequence viba_42611, sequencing info 42612	

### Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_41371	ALG/Međa/2019/IZSLER/19/33806/2	bovine	99.8	0	O	EA-3		
viba_41387	ALG/Međa/2019/IZSLER/19/33806/6	bovine	99.8	0	O	EA-3		
viba_41379	ALG/El Bayadh/2019/IZSLER/19/33806/4	bovine	99.8	0	O	EA-3		
viba_41375	ALG/Oran/2019/IZSLER/19/33806/3	ovine	99.8	0	O	EA-3		
viba_41383	ALG/Tissemsilt/2019/IZSLER/19/33806/5	ovine	99.8	0	O	EA-3		
viba_39456	ALG/1/2019	cattle	99.7	0	O	EA-3		
viba_39452	ALG/8/2018	cattle	99.7	0	O	EA-3		
viba_41367	ALG/El Bayadh/2019/IZSLER/19/33806/1	bovine	99.7	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		

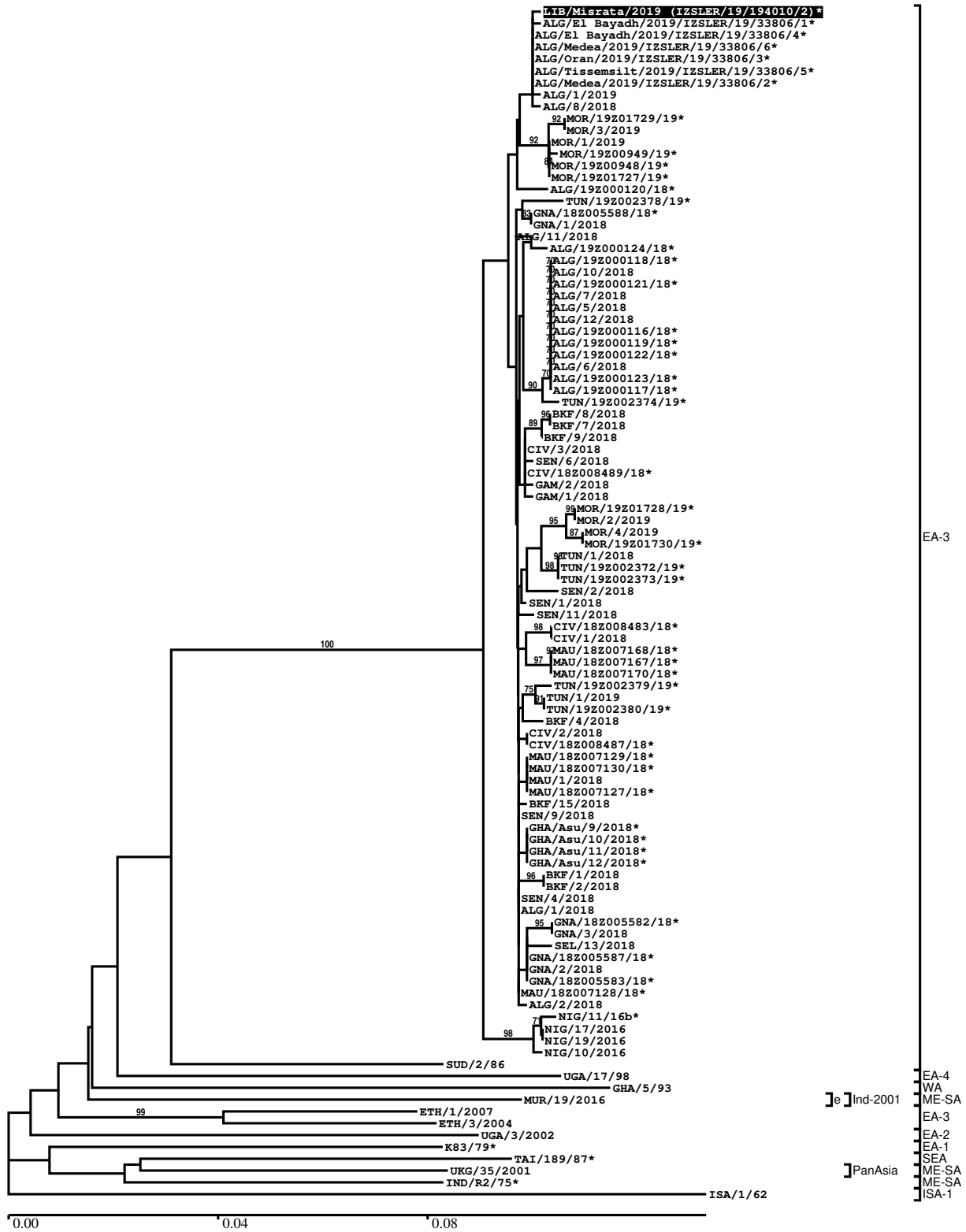
### Most Closely Related Prototype Sequences

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	85.5	0	O	EA-3		
viba_408	ETH/3/2004	cattle	85.3	0	O	EA-3		
viba_30238	MUR/19/2016	cattle	85.2	0	O	ME-SA	Ind-2001	e
viba_50	UGA/17/98		84.9	0	O	EA-4		
viba_104	GHA/5/93	bovine	84.1	0	O	WA		
viba_85	UGA/3/2002		84.0	0	O	EA-2		
viba_523	K83/79		84.0	0	O	EA-1		
viba_285	UKG/35/2001	porcine	83.8	0	O	ME-SA	PanAsia	
viba_576	IND/R2/75		83.8	0	O	ME-SA		

Report on FMDV O in Libya in 2019

Batch: WRLMEG/2019/00039



\*, not a WRLFMD Reference Number

## Analysis Parameters

VP1 subsequence extractor:	vp1_O
Query sequence set:	WRLMEG/2019/00039-Libya-O (1 sequences)
Sequence database set:	allseqs_O (4601 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:	10
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
LIB/Misrata/2019 (IZSLER/19/194010/2)*	n/a	cattle	IZSLER	Libya	EA-3
ALG/El Bayadh/2019/IZSLER/19/33806/1*	n/a	bovine	IZSLER	Algeria	EA-3
ALG/El Bayadh/2019/IZSLER/19/33806/4*	n/a	bovine	IZSLER	Algeria	EA-3
ALG/Medea/2019/IZSLER/19/33806/6*	n/a	bovine	IZSLER	Algeria	EA-3
ALG/Oran/2019/IZSLER/19/33806/3*	n/a	ovine	IZSLER	Algeria	EA-3
ALG/Tissemsilt/2019/IZSLER/19/33806/5*	n/a	ovine	IZSLER	Algeria	EA-3
ALG/Medea/2019/IZSLER/19/33806/2*	n/a	bovine	IZSLER	Algeria	EA-3
ALG/1/2019	n/a	cattle	WRLFMD	Algeria	EA-3
ALG/8/2018	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/1/2019	n/a	cattle	WRLFMD	Morocco	EA-3
MOR/19Z00949/19*	n/a	bovine	ANSES	Morocco	EA-3
MOR/19Z00948/19*	n/a	bovine	ANSES	Morocco	EA-3
MOR/19Z01727/19*	n/a	bovine	ANSES	Morocco	EA-3
ALG/19Z000120/18*	n/a	ovine	ANSES	Algeria	EA-3
TUN/19Z002378/19*	n/a	bovine	ANSES	Tunisia	EA-3
GNA/18Z005588/18*	n/a	n/a	ANSES	Guinea	EA-3
GNA/1/2018	n/a	cattle	WRLFMD	Guinea	EA-3
ALG/11/2018	n/a	n/a	WRLFMD	Algeria	EA-3
ALG/19Z000124/18*	n/a	caprine	ANSES	Algeria	EA-3
ALG/19Z000118/18*	n/a	bovine	ANSES	Algeria	EA-3
ALG/10/2018	n/a	sheep	WRLFMD	Algeria	EA-3
ALG/19Z000121/18*	n/a	caprine	ANSES	Algeria	EA-3
ALG/7/2018	n/a	cattle	WRLFMD	Algeria	EA-3
ALG/5/2018	n/a	cattle	WRLFMD	Algeria	EA-3
ALG/12/2018	n/a	cattle	WRLFMD	Algeria	EA-3
ALG/19Z000116/18*	n/a	bovine	ANSES	Algeria	EA-3
ALG/19Z000119/18*	n/a	bovine	ANSES	Algeria	EA-3
ALG/19Z000122/18*	n/a	caprine	ANSES	Algeria	EA-3
ALG/6/2018	n/a	cattle	WRLFMD	Algeria	EA-3
ALG/19Z000123/18*	n/a	caprine	ANSES	Algeria	EA-3
ALG/19Z000117/18*	n/a	bovine	ANSES	Algeria	EA-3
TUN/19Z002374/19*	n/a	bovine	ANSES	Tunisia	EA-3
BKF/8/2018	n/a	cattle	WRLFMD	Burkina Faso	EA-3
BKF/7/2018	n/a	cattle	WRLFMD	Burkina Faso	EA-3

*continued on next page*

label	accession	host(s)	lab	country	taxonomic information
BKF/9/2018	n/a	cattle	WRLFMD	Burkina Faso	EA-3
CIV/3/2018	n/a	porcine	WRLFMD	Cote d'Ivoire	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
MOR/19Z01728/19*	n/a	bovine	ANSES	Morocco	EA-3
MOR/2/2019	n/a	cattle	WRLFMD	Morocco	EA-3
MOR/4/2019	n/a	cattle	WRLFMD	Morocco	EA-3
MOR/19Z01730/19*	n/a	bovine	ANSES	Morocco	EA-3
TUN/1/2018	n/a	cattle	WRLFMD	Tunisia	EA-3
TUN/19Z002372/19*	n/a	bovine	ANSES	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
SEN/11/2018	n/a	cattle	WRLFMD	Senegal	EA-3
CIV/18Z008483/18*	n/a	porcine	ANSES	Cote d'Ivoire	EA-3
CIV/1/2018	n/a	porcine	WRLFMD	Cote d'Ivoire	EA-3
MAU/18Z007168/18*	n/a	n/a	ANSES	Mauritania	EA-3
MAU/18Z007167/18*	n/a	n/a	ANSES	Mauritania	EA-3
MAU/18Z007170/18*	n/a	n/a	ANSES	Mauritania	EA-3
TUN/19Z002379/19*	n/a	bovine	ANSES	Tunisia	EA-3
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
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/18Z007129/18*	n/a	n/a	ANSES	Mauritania	EA-3
MAU/18Z007130/18*	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
SEN/9/2018	n/a	cattle	WRLFMD	Senegal	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
BKF/1/2018	n/a	cattle	WRLFMD	Burkina Faso	EA-3
BKF/2/2018	n/a	cattle	WRLFMD	Burkina Faso	EA-3
SEN/4/2018	n/a	cattle	WRLFMD	Senegal	EA-3
ALG/1/2018	n/a	cattle	WRLFMD	Algeria	EA-3
GNA/18Z005582/18*	n/a	n/a	ANSES	Guinea	EA-3
GNA/3/2018	n/a	cattle	WRLFMD	Guinea	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/2/2018	n/a	cattle	WRLFMD	Guinea	EA-3
GNA/18Z005583/18*	n/a	n/a	ANSES	Guinea	EA-3
MAU/18Z007128/18*	n/a	n/a	ANSES	Mauritania	EA-3
ALG/2/2018	n/a	cattle	WRLFMD	Algeria	EA-3
NIG/11/16b*	MH894431	cattle	PIADC	Nigeria	EA-3
NIG/17/2016	n/a	cattle	WRLFMD	Nigeria	EA-3
NIG/19/2016	n/a	cattle	WRLFMD	Nigeria	EA-3
NIG/10/2016	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
MUR/19/2016	MG972510	cattle	WRLFMD	Mauritius	ME-SA/Ind-2001/e
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

*continued on next page*

---

label	accession	host(s)	lab	country	taxonomic information
UKG/35/2001	AJ539141	porcine	PIADC	United Kingdom	ME-SA/PanAsia
IND/R2/75*	AF204276	n/a	PD-FMD	India	ME-SA
ISA/1/62	AJ303500	n/a	WRLFMD	Indonesia	ISA-1

\*, not a WRLFMD Reference Number

n/a, not available