

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

Genotyping Report

FMDV serotype: O
Country: Namibia
Year: 2021
Batch: WRLMEG/2021/00012
No. of sequences: 1
Report date: 14th August 2021
Report generated by: Nick Knowles
Report checked by: Hayley Hicks

This report is prepared on behalf of the OIE Sub-Saharan Africa Regional Reference Laboratory (SSARRL) for FMD (Botswana Vaccine Institute, Gaborone, Botswana) and covers a VP1 sequence submitted to the WRLFMD on 13th August 2021.



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Virus sample name:	NAM13/2021
Sender reference:	O/NAM13/2021
Location of origin:	Katima Muliro Urban, Zambezi
Country of origin:	Namibia
Date of collection:	13/07/2021
Host species:	bovine
Serotype:	O
Topotype:	EA-2
Lineage:	
Sublineage:	
Sequence length:	633
Ambiguities:	1
Material submitted for sequencing:	epithelial tissue RNA extract
Harvest date of material:	n/a
Primers:	O-1C244F/EUR-2B52R
Received for sequencing:	n/a
Created:	14/08/2021
Last updated:	14/08/2021
VIBASys IDs: sample 48483, genome 48484, sequence viba_48485, sequencing info 48486	

Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_48335	ZAM/11/2021	cattle	99.5	0	O	EA-2		
viba_48331	ZAM/9/2021	cattle	99.5	0	O	EA-2		
viba_48327	ZAM/7/2021	cattle	97.3	0	O	EA-2		
viba_48211	ZAM/16/2019	cattle	96.2	0	O	EA-2		
viba_48267	ZAM/62/2019	cattle	96.2	0	O	EA-2		
viba_48207	ZAM/15/2019	cattle	96.2	0	O	EA-2		
viba_48223	ZAM/21/2019	cattle	96.1	0	O	EA-2		
viba_48259	ZAM/58/2019	cattle	96.1	0	O	EA-2		
viba_41418	ZAM/7/2019	bovine	96.1	0	O	EA-2		
viba_48215	ZAM/18/2019	porcine	96.1	0	O	EA-2		

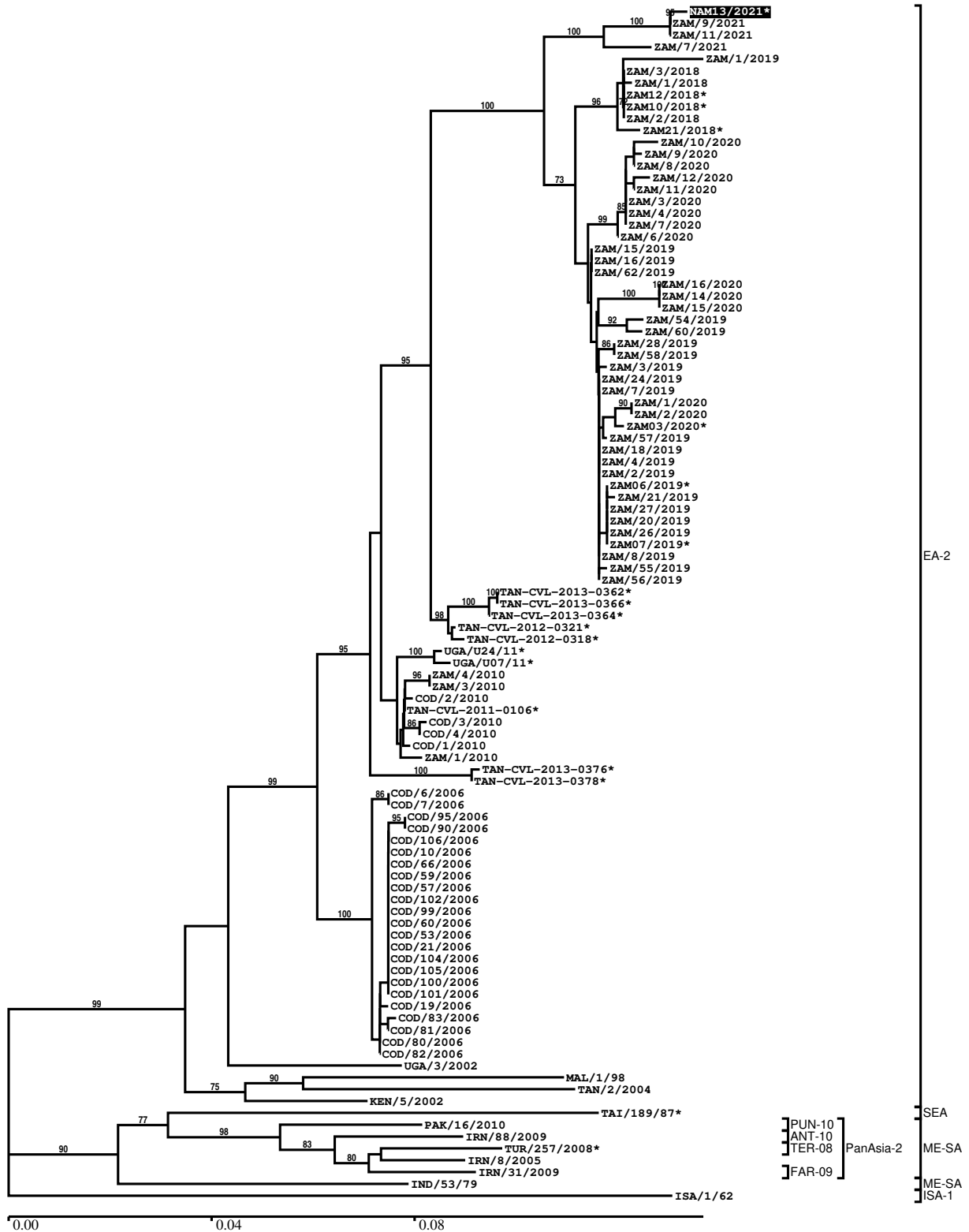
Most Closely Related Prototype Sequences

see <http://www.wrlfmd.org/fmdv-genome/fmd-prototype-strains>

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_85	UGA/3/2002		88.9	0	O	EA-2		
viba_74	KEN/5/2002	bovine	87.8	0	O	EA-2		
viba_221	MAL/1/98		85.8	0	O	EA-2		
viba_263	TAN/2/2004	bovine	84.5	0	O	EA-2		
viba_354	PAK/16/2010	cattle	83.4	0	O	ME-SA	PanAsia-2	PUN-10
viba_719	IRN/88/2009		83.3	0	O	ME-SA	PanAsia-2	ANT-10
viba_650	IRN/8/2005	ovine	83.1	0	O	ME-SA	PanAsia-2	
viba_766	IRN/31/2009	cattle	83.1	0	O	ME-SA	PanAsia-2	FAR-09
viba_491	TUR/257/2008		83.0	0	O	ME-SA	PanAsia-2	TER-08
viba_617	IND/53/79	bovine	82.6	0	O	ME-SA		

Report on FMDV O in Namibia in 2021

Batch: WRLMEG/2021/00012



*, not a WRLFMD Reference Number

Analysis Parameters

VP1 subsequence extractor:	vp1_O
Query sequence set:	WRLMEG/2021/00012-Namibia-O (1 sequences)
Sequence database set:	allseqs_O (5287 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
NAM13/2021*	n/a	bovine	BVI	Namibia	EA-2
ZAM/9/2021	n/a	cattle	WRLFMD	Zambia	EA-2
ZAM/11/2021	n/a	cattle	WRLFMD	Zambia	EA-2
ZAM/7/2021	n/a	cattle	WRLFMD	Zambia	EA-2
ZAM/1/2019	n/a	bovine	WRLFMD	Zambia	EA-2
ZAM/3/2018	n/a	cattle	WRLFMD	Zambia	EA-2
ZAM/1/2018	n/a	cattle	WRLFMD	Zambia	EA-2
ZAM12/2018*	n/a	bovine	BVI	Zambia	EA-2
ZAM10/2018*	n/a	bovine	BVI	Zambia	EA-2
ZAM/2/2018	n/a	cattle	WRLFMD	Zambia	EA-2
ZAM21/2018*	n/a	bovine	BVI	Zambia	EA-2
ZAM/10/2020	n/a	cattle	WRLFMD	Zambia	EA-2
ZAM/9/2020	n/a	cattle	WRLFMD	Zambia	EA-2
ZAM/8/2020	n/a	cattle	WRLFMD	Zambia	EA-2
ZAM/12/2020	n/a	cattle	WRLFMD	Zambia	EA-2
ZAM/11/2020	n/a	cattle	WRLFMD	Zambia	EA-2
ZAM/3/2020	n/a	cattle	WRLFMD	Zambia	EA-2
ZAM/4/2020	n/a	cattle	WRLFMD	Zambia	EA-2
ZAM/7/2020	n/a	cattle	WRLFMD	Zambia	EA-2
ZAM/6/2020	n/a	cattle	WRLFMD	Zambia	EA-2
ZAM/15/2019	n/a	cattle	WRLFMD	Zambia	EA-2
ZAM/16/2019	n/a	cattle	WRLFMD	Zambia	EA-2
ZAM/62/2019	n/a	cattle	WRLFMD	Zambia	EA-2
ZAM/16/2020	n/a	cattle	WRLFMD	Zambia	EA-2
ZAM/14/2020	n/a	cattle	WRLFMD	Zambia	EA-2
ZAM/15/2020	n/a	cattle	WRLFMD	Zambia	EA-2
ZAM/54/2019	n/a	cattle	WRLFMD	Zambia	EA-2
ZAM/60/2019	n/a	cattle	WRLFMD	Zambia	EA-2
ZAM/28/2019	n/a	cattle	WRLFMD	Zambia	EA-2
ZAM/58/2019	n/a	cattle	WRLFMD	Zambia	EA-2
ZAM/3/2019	n/a	bovine	WRLFMD	Zambia	EA-2
ZAM/24/2019	n/a	cattle	WRLFMD	Zambia	EA-2
ZAM/7/2019	n/a	bovine	WRLFMD	Zambia	EA-2
ZAM/1/2020	n/a	porcine	WRLFMD	Zambia	EA-2
ZAM/2/2020	n/a	porcine	WRLFMD	Zambia	EA-2
ZAM03/2020*	n/a	bovine	BVI	Zambia	EA-2

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label	accession	host(s)	lab	country	taxonomic information
ZAM/57/2019	n/a	cattle	WRLFMD	Zambia	EA-2
ZAM/18/2019	n/a	porcine	WRLFMD	Zambia	EA-2
ZAM/4/2019	n/a	bovine	WRLFMD	Zambia	EA-2
ZAM/2/2019	n/a	bovine	WRLFMD	Zambia	EA-2
ZAM06/2019*	n/a	bovine	BVI	Zambia	EA-2
ZAM/21/2019	n/a	cattle	WRLFMD	Zambia	EA-2
ZAM/27/2019	n/a	cattle	WRLFMD	Zambia	EA-2
ZAM/20/2019	n/a	cattle	WRLFMD	Zambia	EA-2
ZAM/26/2019	n/a	cattle	WRLFMD	Zambia	EA-2
ZAM07/2019*	n/a	bovine	BVI	Zambia	EA-2
ZAM/8/2019	n/a	bovine	WRLFMD	Zambia	EA-2
ZAM/55/2019	n/a	cattle	WRLFMD	Zambia	EA-2
ZAM/56/2019	n/a	cattle	WRLFMD	Zambia	EA-2
TAN-CVL-2013-0362*	n/a	cattle	CVL, Tanzania	Tanzania	EA-2
TAN-CVL-2013-0366*	n/a	cattle	CVL, Tanzania	Tanzania	EA-2
TAN-CVL-2013-0364*	n/a	cattle	CVL, Tanzania	Tanzania	EA-2
TAN-CVL-2012-0321*	n/a	bovine	CVL	Tanzania	EA-2
TAN-CVL-2012-0318*	n/a	bovine	CVL	Tanzania	EA-2
UGA/U24/11*	KF478941	cattle	Makerere University	Uganda	EA-2
UGA/U07/11*	KF478939	cattle	Makerere University	Uganda	EA-2
ZAM/4/2010	n/a	cattle	WRLFMD	Zambia	EA-2
ZAM/3/2010	n/a	cattle	WRLFMD	Zambia	EA-2
COD/2/2010	n/a	cattle	WRLFMD	Democratic Republic of the Congo	EA-2
TAN-CVL-2011-0106*	n/a	cattle	CVL, Tanzania	Tanzania	EA-2
COD/3/2010	n/a	cattle	WRLFMD	Democratic Republic of the Congo	EA-2
COD/4/2010	n/a	cattle	WRLFMD	Democratic Republic of the Congo	EA-2
COD/1/2010	n/a	cattle	WRLFMD	Democratic Republic of the Congo	EA-2
ZAM/1/2010	n/a	cattle	WRLFMD	Zambia	EA-2
TAN-CVL-2013-0376*	n/a	cattle	CVL, Tanzania	Tanzania	EA-2
TAN-CVL-2013-0378*	n/a	cattle	CVL, Tanzania	Tanzania	EA-2
COD/6/2006	n/a	cattle	WRLFMD	Democratic Republic of the Congo	EA-2
COD/7/2006	n/a	cattle	WRLFMD	Democratic Republic of the Congo	EA-2
COD/95/2006	n/a	cattle	WRLFMD	Democratic Republic of the Congo	EA-2
COD/90/2006	n/a	cattle	WRLFMD	Democratic Republic of the Congo	EA-2
COD/106/2006	n/a	cattle	WRLFMD	Democratic Republic of the Congo	EA-2
COD/10/2006	n/a	cattle	WRLFMD	Democratic Republic of the Congo	EA-2
COD/66/2006	n/a	cattle	WRLFMD	Democratic Republic of the Congo	EA-2
COD/59/2006	n/a	cattle	WRLFMD	Democratic Republic of the Congo	EA-2
COD/57/2006	n/a	cattle	WRLFMD	Democratic Republic of the Congo	EA-2

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label	accession	host(s)	lab	country	taxonomic information
COD/102/2006	n/a	cattle	WRLFMD	Democratic Republic of the Congo	EA-2
COD/99/2006	n/a	cattle	WRLFMD	Democratic Republic of the Congo	EA-2
COD/60/2006	n/a	cattle	WRLFMD	Democratic Republic of the Congo	EA-2
COD/53/2006	n/a	cattle	WRLFMD	Democratic Republic of the Congo	EA-2
COD/21/2006	n/a	cattle	WRLFMD	Democratic Republic of the Congo	EA-2
COD/104/2006	n/a	cattle	WRLFMD	Democratic Republic of the Congo	EA-2
COD/105/2006	n/a	cattle	WRLFMD	Democratic Republic of the Congo	EA-2
COD/100/2006	n/a	cattle	WRLFMD	Democratic Republic of the Congo	EA-2
COD/101/2006	n/a	cattle	WRLFMD	Democratic Republic of the Congo	EA-2
COD/19/2006	n/a	cattle	WRLFMD	Democratic Republic of the Congo	EA-2
COD/83/2006	n/a	cattle	WRLFMD	Democratic Republic of the Congo	EA-2
COD/81/2006	n/a	cattle	WRLFMD	Democratic Republic of the Congo	EA-2
COD/80/2006	n/a	cattle	WRLFMD	Democratic Republic of the Congo	EA-2
COD/82/2006	n/a	cattle	WRLFMD	Democratic Republic of the Congo	EA-2
UGA/3/2002	DQ165077	n/a	WRLFMD	Uganda	EA-2
MAL/1/98	DQ165074	n/a	WRLFMD	Malawi	EA-2
TAN/2/2004	KF561679	bovine	WRLFMD	Tanzania	EA-2
KEN/5/2002	DQ165073	bovine	WRLFMD	Kenya	EA-2
TAI/189/87*	KY091288	bovine	TRRL	Thailand	SEA
PAK/16/2010	KY091285	cattle	WRLFMD	Pakistan	ME-SA/PanAsia-2/PUN-10
IRN/88/2009	KY091282	n/a	WRLFMD	Iran	ME-SA/PanAsia-2/ANT-10
TUR/257/2008*	n/a	n/a	FMDI-Ankara	Turkey	ME-SA/PanAsia-2/TER-08
IRN/8/2005	KY091281	ovine	WRLFMD	Iran	ME-SA/PanAsia-2
IRN/31/2009	KY091284	cattle	WRLFMD	Iran	ME-SA/PanAsia-2/FAR-09
IND/53/79	AF292107	bovine	PD-FMD	India	ME-SA
ISA/1/62	AJ303500	n/a	WRLFMD	Indonesia	ISA-1

*, not a WRLFMD Reference Number

n/a, not available