

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

Genotyping Report

FMDV serotype: SAT2
Country: Mali
Year: 2021
Batch: WRLMEG/2022/00015
No. of sequences: 2
Report date: 16th May 2022
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 13/05/2022.



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

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Virus sample name:	MAI/22Z003019/21
Sender reference:	MAI/22Z003019/21
Location of origin:	Fakola
Country of origin:	Mali
Date of collection:	14/08/2021
Host species:	bovine
Serotype:	SAT2
Topotype:	VII
Lineage:	
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:	16/05/2022
Last updated:	16/05/2022
VIBASys IDs: sample 50599, genome 50600, sequence viba_50601, sequencing info 50602	

Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_50605	MAI/22Z003020/21	ovine	100.0	0	SAT2	VII		
viba_47707	NGR/20Z007146/19	bovine	98.4	0	SAT2	VII		
viba_45700	KB/005/006/NIG/2019/iso	bovine	98.1	0	SAT2	VII		
viba_20604	NIG/2/2012	bovine	93.9	0	SAT2	VII		
viba_20600	NIG/1/2012	bovine	93.9	0	SAT2	VII		
viba_20608	NIG/3/2012	bovine	93.9	0	SAT2	VII		
viba_40845	Nig/7/12	bovine	92.8	0	SAT2	VII		
viba_40841	Nig/6/12	bovine	92.8	0	SAT2	VII		
viba_40829	Nig/2/12	bovine	92.7	0	SAT2	VII		
viba_40873	Nig/14/12	bovine	92.7	0	SAT2	VII		

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_742	CAR/8/2005	cattle	88.0	0	SAT2	VII		
viba_424	SAU/6/2000	bovine	87.4	1	SAT2	VII		
viba_189	RWA/1/2000		74.2	0	SAT2	VIII		
viba_374	ZAI/1/74		73.7	0	SAT2	VIII		
viba_470	KEN/2/84	bovine	73.5	0	SAT2	IX		
viba_193	SUD/6/77		73.0	0	SAT2	XIII		
viba_456	ZAI/1/82	bovine	72.7	1	SAT2	X		
viba_369	UGA/51/75	bovine	72.4	0	SAT2	XII		
viba_139	ETH/2/2007	cattle	72.3	0	SAT2	XIII		
viba_752	SA/106/59		72.1	0	SAT2	I		

Virus sample name:	MAI/22Z003020/21
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Host species:	ovine
Serotype:	SAT2
Topotype:	VII
Lineage:	
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:	16/05/2022
Last updated:	16/05/2022
VIBASys IDs: sample 50603, genome 50604, sequence viba_50605, sequencing info 50606	

Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_50601	MAI/22Z003019/21	bovine	100.0	0	SAT2	VII		
viba_47707	NGR/20Z007146/19	bovine	98.4	0	SAT2	VII		
viba_45700	KB/005/006/NIG/2019/iso	bovine	98.1	0	SAT2	VII		
viba_20604	NIG/2/2012	bovine	93.9	0	SAT2	VII		
viba_20600	NIG/1/2012	bovine	93.9	0	SAT2	VII		
viba_20608	NIG/3/2012	bovine	93.9	0	SAT2	VII		
viba_40845	Nig/7/12	bovine	92.8	0	SAT2	VII		
viba_40841	Nig/6/12	bovine	92.8	0	SAT2	VII		
viba_40829	Nig/2/12	bovine	92.7	0	SAT2	VII		
viba_40873	Nig/14/12	bovine	92.7	0	SAT2	VII		

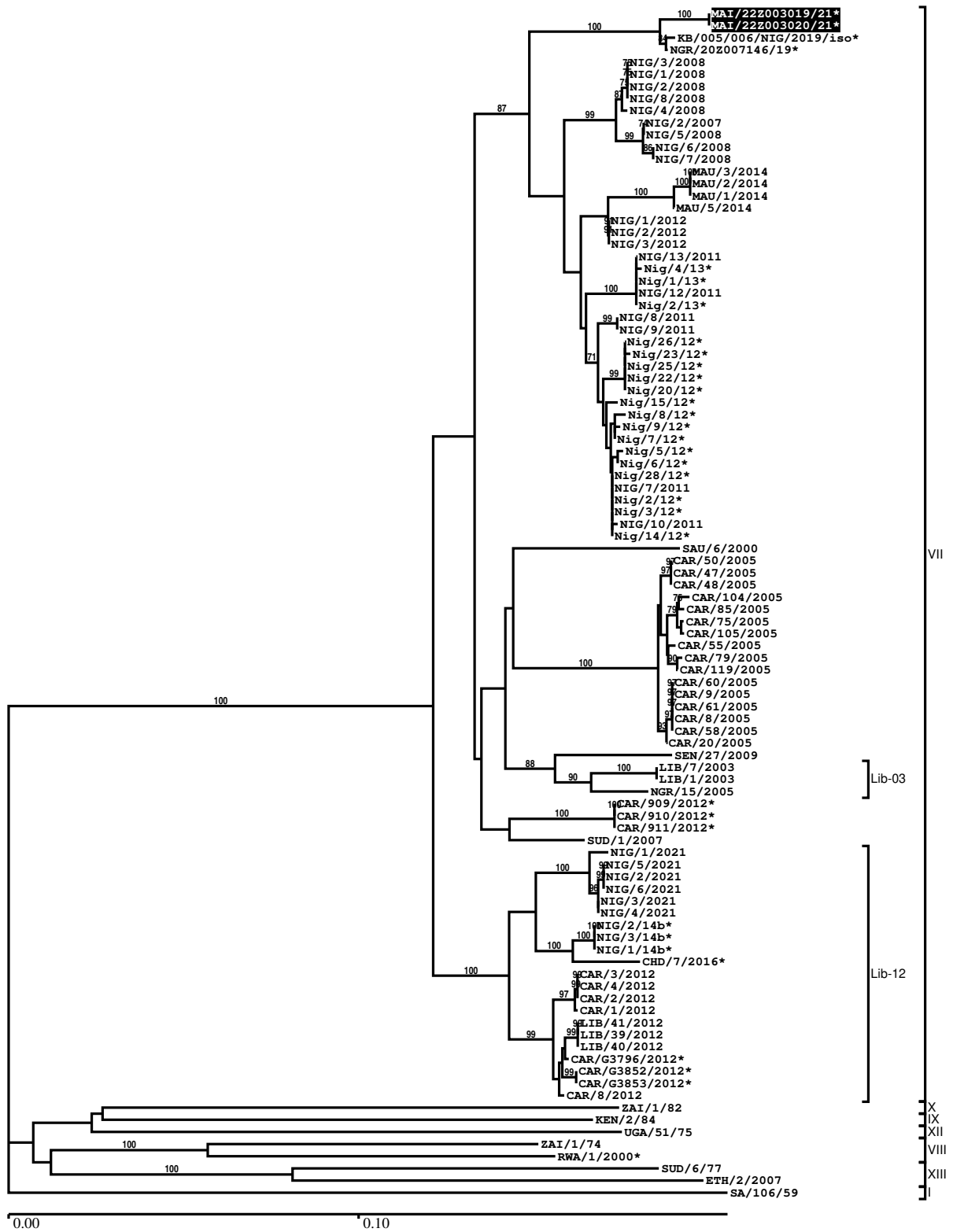
Most Closely Related Prototype Sequences

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

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_742	CAR/8/2005	cattle	88.0	0	SAT2	VII		
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viba_470	KEN/2/84	bovine	73.5	0	SAT2	IX		
viba_193	SUD/6/77		73.0	0	SAT2	XIII		
viba_456	ZAI/1/82	bovine	72.7	1	SAT2	X		
viba_369	UGA/51/75	bovine	72.4	0	SAT2	XII		
viba_139	ETH/2/2007	cattle	72.3	0	SAT2	XIII		
viba_752	SA/106/59		72.1	0	SAT2	I		

Report on FMDV SAT2 in Mali in 2021

Batch: WRLMEG/2022/00015



*, not a WRLFMD Reference Number

Analysis Parameters

VP1 subsequence extractor:	vp1_SAT2
Query sequence set:	WRLMEG/2022/00015-Mali-SAT2 (2 sequences)
Sequence database set:	allseqs_SAT2 (1098 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:	10
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
MAI/22Z003019/21*	n/a	bovine	ANSES	Mali	VII
MAI/22Z003020/21*	n/a	ovine	ANSES	Mali	VII
KB/005/006/NIG/2019/iso*	n/a	bovine	NCFAD/NVRI	Nigeria	VII
NGR/20Z007146/19*	n/a	bovine	ANSES	Niger	VII
NIG/3/2008	KX258078	cattle	WRLFMD	Nigeria	VII
NIG/1/2008	KX258076	cattle	WRLFMD	Nigeria	VII
NIG/2/2008	KX258077	cattle	WRLFMD	Nigeria	VII
NIG/8/2008	KX258083	cattle	WRLFMD	Nigeria	VII
NIG/4/2008	KX258079	cattle	WRLFMD	Nigeria	VII
NIG/2/2007	JX570636	cattle	WRLFMD	Nigeria	VII
NIG/5/2008	KX258080	cattle	WRLFMD	Nigeria	VII
NIG/6/2008	KX258081	cattle	WRLFMD	Nigeria	VII
NIG/7/2008	KX258082	cattle	WRLFMD	Nigeria	VII
MAU/3/2014	KX258074	cattle	WRLFMD	Mauritania	VII
MAU/2/2014	KX258073	cattle	WRLFMD	Mauritania	VII
MAU/1/2014	KX258072	cattle	WRLFMD	Mauritania	VII
MAU/5/2014	KX258075	cattle	WRLFMD	Mauritania	VII
NIG/1/2012	KX258094	bovine	WRLFMD	Nigeria	VII
NIG/2/2012	KX258095	bovine	WRLFMD	Nigeria	VII
NIG/3/2012	KX258096	bovine	WRLFMD	Nigeria	VII
NIG/13/2011	KX258091	bovine	WRLFMD	Nigeria	VII
Nig/4/13*	MF624362	bovine	CODA-CERVA	Nigeria	VII
Nig/1/13*	MF624361	bovine	CODA-CERVA	Nigeria	VII
NIG/12/2011	KX258090	bovine	WRLFMD	Nigeria	VII
Nig/2/13*	MF624359	bovine	CODA-CERVA	Nigeria	VII
NIG/8/2011	KX258087	bovine	WRLFMD	Nigeria	VII
NIG/9/2011	KX258088	bovine	WRLFMD	Nigeria	VII
Nig/26/12*	MH590641	bovine	Sciensano	Nigeria	VII
Nig/23/12*	MH590645	bovine	Sciensano	Nigeria	VII
Nig/25/12*	MH590642	bovine	Sciensano	Nigeria	VII
Nig/22/12*	MH590646	bovine	Sciensano	Nigeria	VII
Nig/20/12*	MH590648	bovine	Sciensano	Nigeria	VII
Nig/15/12*	MH580476	bovine	Sciensano	Nigeria	VII
Nig/8/12*	MH580473	bovine	Sciensano	Nigeria	VII
Nig/9/12*	MH580474	bovine	Sciensano	Nigeria	VII
Nig/7/12*	MH580472	bovine	Sciensano	Nigeria	VII

continued on next page

label	accession	host(s)	lab	country	taxonomic information
Nig/5/12*	MH580470	bovine	Sciensano	Nigeria	VII
Nig/6/12*	MH580471	bovine	Sciensano	Nigeria	VII
Nig/28/12*	MH590644	bovine	Sciensano	Nigeria	VII
NIG/7/2011	KX258086	bovine	WRLFMD	Nigeria	VII
Nig/2/12*	MH580468	bovine	Sciensano	Nigeria	VII
Nig/3/12*	MH580469	bovine	Sciensano	Nigeria	VII
NIG/10/2011	KX258089	bovine	WRLFMD	Nigeria	VII
Nig/14/12*	MH590643	bovine	Sciensano	Nigeria	VII
SAU/6/2000	AF367135	bovine	OVI	Saudi Arabia	VII
CAR/50/2005	KX258153	cattle	WRLFMD	Cameroon	VII
CAR/47/2005	KX258151	cattle	WRLFMD	Cameroon	VII
CAR/48/2005	KX258152	cattle	WRLFMD	Cameroon	VII
CAR/104/2005	KX258176	cattle	WRLFMD	Cameroon	VII
CAR/85/2005	KX258169	cattle	WRLFMD	Cameroon	VII
CAR/75/2005	KX258165	cattle	WRLFMD	Cameroon	VII
CAR/105/2005	KX258177	cattle	WRLFMD	Cameroon	VII
CAR/55/2005	KX258154	cattle	WRLFMD	Cameroon	VII
CAR/79/2005	KX258166	cattle	WRLFMD	Cameroon	VII
CAR/119/2005	KX258184	cattle	WRLFMD	Cameroon	VII
CAR/60/2005	KX258158	cattle	WRLFMD	Cameroon	VII
CAR/9/2005	KX258139	cattle	WRLFMD	Cameroon	VII
CAR/61/2005	KX258159	cattle	WRLFMD	Cameroon	VII
CAR/8/2005	JX570616	cattle	WRLFMD	Cameroon	VII
CAR/58/2005	KX258157	cattle	WRLFMD	Cameroon	VII
CAR/20/2005	KX258141	cattle	WRLFMD	Cameroon	VII
SEN/27/2009	KF112967	cattle	WRLFMD	Senegal	VII
LIB/7/2003	JX570632	n/a	WRLFMD	Libya	VII/Lib-03
LIB/1/2003	JX570631	n/a	WRLFMD	Libya	VII/Lib-03
NGR/15/2005	KF112960	cattle	WRLFMD	Niger	VII/Lib-03
CAR/909/2012*	KU720582	cattle	PIADC	Cameroon	VII
CAR/910/2012*	KU720583	cattle	PIADC	Cameroon	VII
CAR/911/2012*	KU720584	cattle	PIADC	Cameroon	VII
SUD/1/2007	GU566071	cattle	WRLFMD	Sudan	VII
NIG/1/2021	n/a	cattle	WRLFMD	Nigeria	VII/Lib-12
NIG/5/2021	n/a	cattle	WRLFMD	Nigeria	VII/Lib-12
NIG/2/2021	n/a	cattle	WRLFMD	Nigeria	VII/Lib-12
NIG/6/2021	n/a	cattle	WRLFMD	Nigeria	VII/Lib-12
NIG/3/2021	n/a	cattle	WRLFMD	Nigeria	VII/Lib-12
NIG/4/2021	n/a	cattle	WRLFMD	Nigeria	VII/Lib-12
NIG/2/14b*	MH894445	cattle	PIADC	Nigeria	VII/Lib-12
NIG/3/14b*	MH894446	cattle	PIADC	Nigeria	VII/Lib-12
NIG/1/14b*	MH894444	cattle	PIADC	Nigeria	VII/Lib-12
CHD/7/2016*	MH748579	cattle	ANSES	Chad	VII/Lib-12
CAR/3/2012	KX266285	n/a	WRLFMD	Cameroon	VII/Lib-12
CAR/4/2012	KX266286	n/a	WRLFMD	Cameroon	VII/Lib-12
CAR/2/2012	KX266284	n/a	WRLFMD	Cameroon	VII/Lib-12
CAR/1/2012	KX266283	n/a	WRLFMD	Cameroon	VII/Lib-12
LIB/41/2012	JX570635	cattle	WRLFMD	Libya	VII/Lib-12
LIB/39/2012	JX570633	cattle	WRLFMD	Libya	VII/Lib-12
LIB/40/2012	JX570634	cattle	WRLFMD	Libya	VII/Lib-12
CAR/G3796/2012*	KY581674	cattle	PIADC	Cameroon	VII/Lib-12
CAR/G3852/2012*	KY581672	cattle	PIADC	Cameroon	VII/Lib-12
CAR/G3853/2012*	KY581671	cattle	PIADC	Cameroon	VII/Lib-12
CAR/8/2012	KX266287	n/a	WRLFMD	Cameroon	VII/Lib-12
ZAI/1/82	AF367100	bovine	OVI	Zaire	X
KEN/2/84	AY343941	bovine	OVI	Kenya	IX
UGA/51/75	AY343963	bovine	OVI	Uganda	XII
ZAI/1/74	DQ009737	n/a	OVI	Zaire	VIII
RWA/1/2000*	AF367134	n/a	OVI	Rwanda	VIII
SUD/6/77	AY343939	n/a	OVI	Sudan	XIII
ETH/2/2007	F798161	cattle	WRLFMD	Ethiopia	XIII
SA/106/59	AY593848	n/a	PIADC	South Africa (SA)	I

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