

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

Genotyping Report

FMDV serotype: SAT1
Country: Nigeria
Year: 2015
Batch: WRLMEG/2020/00038
No. of sequences: 3
Report date: 16th December 2020
Report generated by: Nick Knowles
Report checked by: Jemma Wadsworth



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

email: reporting@pirbright.ac.uk

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Virus sample name:	NIG/6/2015
Sender reference:	SAT1/NIG/6/2015
Location of origin:	Jos South, Plateau state
Country of origin:	Nigeria
Date of collection:	27/11/2015
Host species:	cattle
Serotype:	SAT1
Topotype:	X
Lineage:	
Sublineage:	
Sequence length:	654
Ambiguities:	0
Material submitted for sequencing:	n/a
Harvest date of material:	n/a
Primers:	n/a
Received for sequencing:	n/a
Created:	16/12/2020
Last updated:	16/12/2020
VIBASys IDs: sample 45910, genome 45911, sequence viba_45912, sequencing info 45913	

Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_41044	NIG/2/16c	cattle	100.0	0	SAT1	X		
viba_30943	NIG/2/2015	cattle	100.0	0	SAT1	X		
viba_41048	NIG/3/16c	cattle	100.0	0	SAT1	X		
viba_41080	NIG/11/16c	cattle	100.0	0	SAT1	X		
viba_41052	NIG/4/16c	cattle	100.0	0	SAT1	X		
viba_41040	NIG/1/16c	cattle	100.0	0	SAT1	X		
viba_41056	NIG/5/16c	cattle	100.0	0	SAT1	X		
viba_30939	NIG/1/2015	cattle	100.0	0	SAT1	X		
viba_41068	NIG/8/16c	cattle	99.8	0	SAT1	X		
viba_45920	NIG/8/2015	cattle	99.8	0	SAT1	X		

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_30939	NIG/1/2015	cattle	100.0	0	SAT1	X		
viba_440	SUD/3/76		73.2	0	SAT1	VI		
viba_258	UGA/13/74	bovine	73.0	0	SAT1	VII		
viba_446	NIG/11/75	bovine	72.6	0	SAT1	V		
viba_514	UGA-BUFF/21/70	African buffalo	71.7	0	SAT1	IV		
viba_732	ISR/4/62		71.3	0	SAT1	VI		
viba_30740	ANG/9/74		70.9	0	SAT1	XII		
viba_16635	MOZ/P13/2010 BUF B16	African buffalo	70.5	0	SAT1	XIII		
viba_509	BOT/1/77	bovine	70.4	0	SAT1	III		
viba_232	ETH/3/2007	cattle	70.1	0	SAT1	IX		

Virus sample name:	NIG/7/2015
Sender reference:	SAT1/NIG/7/2015
Location of origin:	Jos South, Plateau state
Country of origin:	Nigeria
Date of collection:	27/11/2015
Host species:	cattle
Serotype:	SAT1
Topotype:	X
Lineage:	
Sublineage:	
Sequence length:	654
Ambiguities:	1
Material submitted for sequencing:	n/a
Harvest date of material:	n/a
Primers:	n/a
Received for sequencing:	n/a
Created:	16/12/2020
Last updated:	16/12/2020
VIBASys IDs: sample 45914, genome 45915, sequence viba_45916, sequencing info 45917	

Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_41044	NIG/2/16c	cattle	99.8	0	SAT1	X		
viba_30943	NIG/2/2015	cattle	99.8	0	SAT1	X		
viba_41048	NIG/3/16c	cattle	99.8	0	SAT1	X		
viba_41080	NIG/11/16c	cattle	99.8	0	SAT1	X		
viba_45912	NIG/6/2015	cattle	99.8	0	SAT1	X		
viba_41052	NIG/4/16c	cattle	99.8	0	SAT1	X		
viba_41040	NIG/1/16c	cattle	99.8	0	SAT1	X		
viba_41056	NIG/5/16c	cattle	99.8	0	SAT1	X		
viba_30939	NIG/1/2015	cattle	99.8	0	SAT1	X		
viba_41068	NIG/8/16c	cattle	99.7	0	SAT1	X		

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_30939	NIG/1/2015	cattle	99.8	0	SAT1	X		
viba_440	SUD/3/76		73.2	0	SAT1		VI	
viba_258	UGA/13/74	bovine	73.0	0	SAT1		VII	
viba_446	NIG/11/75	bovine	72.6	0	SAT1		V	
viba_514	UGA-BUFF/21/70	African buffalo	71.7	0	SAT1		IV	
viba_732	ISR/4/62		71.2	0	SAT1		VI	
viba_30740	ANG/9/74		70.9	0	SAT1		XII	
viba_16635	MOZ/P13/2010 BUF B16	African buffalo	70.5	0	SAT1		XIII	
viba_509	BOT/1/77	bovine	70.4	0	SAT1		III	
viba_232	ETH/3/2007	cattle	70.1	0	SAT1		IX	

Virus sample name:	NIG/8/2015
Sender reference:	SAT1/NIG/8/2015
Location of origin:	Jos South, Plateau state
Country of origin:	Nigeria
Date of collection:	02/12/2015
Host species:	cattle
Serotype:	SAT1
Topotype:	X
Lineage:	
Sublineage:	
Sequence length:	654
Ambiguities:	0
Material submitted for sequencing:	n/a
Harvest date of material:	n/a
Primers:	n/a
Received for sequencing:	n/a
Created:	16/12/2020
Last updated:	16/12/2020
VIBASys IDs: sample 45918, genome 45919, sequence viba_45920, sequencing info 45921	

Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_41068	NIG/8/16c	cattle	100.0	0	SAT1	X		
viba_30947	NIG/3/2015	cattle	100.0	0	SAT1	X		
viba_41076	NIG/10/16c	cattle	100.0	0	SAT1	X		
viba_41072	NIG/9/16c	cattle	100.0	0	SAT1	X		
viba_41064	NIG/7/16c	cattle	100.0	0	SAT1	X		
viba_41060	NIG/6/16c	cattle	100.0	0	SAT1	X		
viba_41044	NIG/2/16c	cattle	99.8	0	SAT1	X		
viba_30943	NIG/2/2015	cattle	99.8	0	SAT1	X		
viba_41048	NIG/3/16c	cattle	99.8	0	SAT1	X		
viba_41080	NIG/11/16c	cattle	99.8	0	SAT1	X		

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_30939	NIG/1/2015	cattle	99.8	0	SAT1	X		
viba_258	UGA/13/74	bovine	73.1	0	SAT1	VII		
viba_440	SUD/3/76		73.1	0	SAT1	VI		
viba_446	NIG/11/75	bovine	72.6	0	SAT1	V		
viba_514	UGA-BUFF/21/70	African buffalo	71.7	0	SAT1	IV		
viba_732	ISR/4/62		71.2	0	SAT1	VI		
viba_30740	ANG/9/74		70.8	0	SAT1	XII		
viba_509	BOT/1/77	bovine	70.4	0	SAT1	III		
viba_16635	MOZ/P13/2010 BUF B16	African buffalo	70.4	0	SAT1	XIII		
viba_232	ETH/3/2007	cattle	70.0	0	SAT1	IX		

Report on FMDV SAT1 in Nigeria in 2015

Batch: WRLMEG/2020/00038



*, not a WRLFMD Reference Number

Analysis Parameters

VP1 subsequence extractor:	vp1_SAT1
Query sequence set:	WRLMEG/2020/00038-Nigeria-SAT1 (3 sequences)
Sequence database set:	allseqs_SAT1 (791 sequences)
Prototype sequence set:	!prototypes_SAT1 (19 sequences)
Number of related sequences reported:	10
Minimal VP1 subsequence match length	600
Sequence alignment method:	muscle (default parameters)
Sequence alignment length:	654
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/SAT1

label	accession	host(s)	lab	country	taxonomic information
NIG/8/2015*	MT239382	cattle	Sciensano	Nigeria	X
NIG/9/16c*	MH894441	cattle	PIADC	Nigeria	X
NIG/3/2015	n/a	cattle	WRLFMD	Nigeria	X
NIG/7/16c*	MH894439	cattle	PIADC	Nigeria	X
NIG/8/16c*	MH894440	cattle	PIADC	Nigeria	X
NIG/6/16c*	MH894438	cattle	PIADC	Nigeria	X
NIG/10/16c*	MH894442	cattle	PIADC	Nigeria	X
NIG/7/2015*	MT239381	cattle	Sciensano	Nigeria	X
NIG/6/2015*	MT239380	cattle	Sciensano	Nigeria	X
NIG/1/2015	n/a	cattle	WRLFMD	Nigeria	X
NIG/5/16c*	MH894437	cattle	PIADC	Nigeria	X
NIG/1/16c*	MH894433	cattle	PIADC	Nigeria	X
NIG/3/16c*	MH894435	cattle	PIADC	Nigeria	X
NIG/2/2015	n/a	cattle	WRLFMD	Nigeria	X
NIG/2/16c*	MH894434	cattle	PIADC	Nigeria	X
NIG/11/16c*	MH894443	cattle	PIADC	Nigeria	X
NIG/4/16c*	MH894436	cattle	PIADC	Nigeria	X
CAR/Saigue/2016*	MK469993	cattle	PIADC	Cameroon	X
CAR/2293/2016*	MK469992	cattle	PIADC	Cameroon	X
CAR/73/2016*	MK469979	cattle	PIADC	Cameroon	X
CAR/171/2016*	MK469981	cattle	PIADC	Cameroon	X
CAR/2194/2016*	MK469990	cattle	PIADC	Cameroon	X
CAR/2186/2016*	MK469989	cattle	PIADC	Cameroon	X
CAR/177/2016*	MK469982	cattle	PIADC	Cameroon	X
CAR/2169/2016*	MK469987	cattle	PIADC	Cameroon	X
CAR/154/2016*	MK469980	cattle	PIADC	Cameroon	X
CAR/182/2016*	MK469983	cattle	PIADC	Cameroon	X
CAR/2115/2016*	MK469986	cattle	PIADC	Cameroon	X
CAR/2101/2016*	MK469985	cattle	PIADC	Cameroon	X
CAR/954/2016*	MK469984	cattle	PIADC	Cameroon	X
CAR/2199/2016*	MK469991	cattle	PIADC	Cameroon	X
CAR/2183/2016*	MK469988	cattle	PIADC	Cameroon	X
NIG/1/2015a*	KX822796	bovine	CODA-CERVA	Nigeria	X
NIG/2/2015a*	KX822795	bovine	CODA-CERVA	Nigeria	X

continued on next page

label	accession	host(s)	lab	country	taxonomic information
ISR/4/62	AY593844	n/a	PIADC	Israel	VI
YEM/15/84	n/a	cattle	WRLFMD	Yemen	VI
YEM/18/84	n/a	n/a	WRLFMD	Yemen	VI
SUD/3/76	DQ009725	n/a	OVI	Sudan	VI
SUD/4/76	n/a	n/a	WRLFMD	Sudan	VI
SUD/4/76	AY441997	n/a	OVI	Sudan	VI
SUD/9/74	AY441999	n/a	OVI	Sudan	VI
SUD/8/74	AY441998	n/a	OVI	Sudan	VI
SUD/13/74	AY442000	n/a	OVI	Sudan	VI
NIG/2/79	AF431728	n/a	OVI	Nigeria	VI
NIG/5/81	AF431730	n/a	OVI	Nigeria	VI
NIG/5/81	DQ009723	n/a	OVI	Nigeria	VI
NIG/3/80	AF431729	n/a	OVI	Nigeria	VI
NIG/10/81	n/a	n/a	WRLFMD	Nigeria	VI
NIG/10/81	AF431731	n/a	OVI	Nigeria	VI
UGA/47/71	n/a	bovine	WRLFMD	Uganda	VII
UGA/13/74	AY442010	bovine	OVI	Uganda	VII
UGA/6/78	n/a	n/a	WRLFMD	Uganda	VII
ETH/21/2007	FJ798157	cattle	WRLFMD	Ethiopia	IX
ETH/19/2007	FJ798156	sheep	WRLFMD	Ethiopia	IX
ETH/3/2007	FJ798154	cattle	WRLFMD	Ethiopia	IX
NIG/8/76	AF431724	n/a	OVI	Nigeria	V
NIG/20/76	AF431727	cattle	OVI	Nigeria	V
NIG/20/76	n/a	cattle	WRLFMD	Nigeria	V
NGR/4/76	AF431719	n/a	OVI	Niger	V
NGR/5/76	AF431720	n/a	OVI	Niger	V
NIG/14/76	AF431725	n/a	OVI	Nigeria	V
NIG/17/75	AF431712	n/a	OVI	Nigeria	V
NGR/1/76	AF431717	n/a	OVI	Niger	V
NGR/2/76	AF431718	n/a	OVI	Niger	V
NIG/1/76	AF431721	n/a	OVI	Nigeria	V
NIG/5/76	AF431723	n/a	OVI	Nigeria	V
NIG/7/76	AF431726	n/a	OVI	Nigeria	V
NIG/2/76	AF431722	n/a	OVI	Nigeria	V
NIG/15/75	DQ009724	n/a	OVI	Nigeria	V
NIG/14/75	AF431709	n/a	OVI	Nigeria	V
NIG/15/75	AF431710	n/a	OVI	Nigeria	V
NIG/20/75	AF431713	n/a	OVI	Nigeria	V
NIG/11/75	AF431711	bovine	OVI	Nigeria	V
NIG/6/76	AF431716	n/a	OVI	Nigeria	V
NIG/24/75	AF431714	n/a	OVI	Nigeria	V
NIG/25/75	AF431715	n/a	OVI	Nigeria	V
ZIM/P40/91 BUMI-2*	n/a	African buffalo	WRLFMD	Zimbabwe	I
ZIM/P4/95 SEN-12*	n/a	African buffalo	WRLFMD	Zimbabwe	I
ZIM/P4/95 SEN-3*	n/a	African buffalo	WRLFMD	Zimbabwe	I
ZIM/P43/91 MAT-6*	n/a	African buffalo	WRLFMD	Zimbabwe	I
ZIM/P30/90 CHER-28*	n/a	African buffalo	WRLFMD	Zimbabwe	I
ZAM/P2/96 LOC-27*	n/a	African buffalo	WRLFMD	Zambia	I
KEN/104/2009	n/a	cattle	WRLFMD	Kenya	I
MOZ/P13/2010 BUF B16*	KF219691	African buffalo	WRLFMD	Mozambique	XIII
ZIM12/17*	n/a	bovine	BVI	Zimbabwe	III
BOT/24/77	KF219688	n/a	WRLFMD	Botswana	III
BOT/17/77	KF219687	greater kudu	WRLFMD	Botswana	III
NMB/1/2015	n/a	bovine	WRLFMD	Namibia	III
BOT/1/77	KF219686	bovine	WRLFMD	Botswana	III
ZAM/20/80	n/a	cattle	WRLFMD	Zambia	III
ZAM/1/81	n/a	cattle	WRLFMD	Zambia	III
UGA-BUFF/10/70*	KF219681	African buffalo	WRLFMD	Uganda	IV
UGA-BUFF/21/70*	KF219682	African buffalo	WRLFMD	Uganda	IV
UGA/3/99	DQ009722	n/a	OVI	Uganda	IV
UGA/3/99	AY442009	n/a	OVI	Uganda	IV
UGA/7/99	AY442011	n/a	OVI	Uganda	IV
ANG/9/74	MG972460	n/a	WRLFMD	Angola	XII

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