

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

Genotyping Report

FMDV serotype: SAT1
Country: Kenya
Year: 2020
Batch: WRLFMD/2021/00010
No. of sequences: 2
Report date: 24th August 2021
Report generated by: Nick Knowles
Report checked by: Hayley Hicks



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

email: reporting@pirbright.ac.uk

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Virus sample name:	KEN/3/2020
Sender reference:	K10/20
Location of origin:	Manyatta, Rurii, Olkalou, Nyandarua Central, Nyandarua
Country of origin:	Kenya
Date of collection:	01/04/2020
Host species:	cattle
Serotype:	SAT1
Topotype:	I
Lineage:	
Sublineage:	
Sequence length:	657
Ambiguities:	0
Material submitted for sequencing:	WRL-LFBK1
Harvest date of material:	27/07/2021
Primers:	SAT1U-OS/SAT-2B208R, FMD-3161F/FMD-4303R
Received for sequencing:	12/08/2021
Created:	24/08/2021
Last updated:	24/08/2021
VIBASys IDs: sample 48570, genome 48571, sequence viba_48572, sequencing info 48573	

Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_13333	ZAM/7/2009	cattle	92.4	0	SAT1	I		
viba_13329	ZAM/6/2009	cattle	92.4	0	SAT1	I		
viba_13337	ZAM/8/2009	cattle	92.4	0	SAT1	I		
viba_13341	ZAM/9/2009	cattle	92.4	0	SAT1	I		
viba_13321	ZAM/1/2009	cattle	92.2	0	SAT1	I		
viba_13325	ZAM/3/2009	cattle	92.2	0	SAT1	I		
viba_42036	KEN/PRB36/2016 pro	African buffalo	90.9	0	SAT1	I		
viba_466	T155/71	cattle	90.9	0	SAT1	I		
viba_1576	T155/71	cattle	90.9	0	SAT1	I		
viba_42016	KEN/PRB27/2016 pro	African buffalo	90.9	0	SAT1	I		

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_466	T155/71	cattle	90.9	0	SAT1	I		
viba_243	ZIM/23/2003		80.6	0	SAT1	I		
viba_462	RV/11/37	greater kudu	77.1	0	SAT1	II		
viba_16635	MOZ/P13/2010 BUF B16	African buffalo	77.0	0	SAT1	XIII		
viba_709	RHO/5/66	bovine	76.0	0	SAT1	II		
viba_495	BOT/1/68	bovine	75.7	0	SAT1	III		
viba_509	BOT/1/77	bovine	75.5	0	SAT1	III		
viba_514	UGA-BUFF/21/70	African buffalo	75.4	0	SAT1	IV		
viba_30769	MOZ/1/75	cattle	75.3	0	SAT1	XIII		
viba_212	BEC/1/48		74.7	0	SAT1	III		

Virus sample name:	KEN/9/2020
Sender reference:	K16/20
Location of origin:	Kanjuri, Kanjuri, Magutu, Mathira, Nyeri
Country of origin:	Kenya
Date of collection:	01/10/2020
Host species:	cattle
Serotype:	SAT1
Topotype:	I
Lineage:	
Sublineage:	
Sequence length:	657
Ambiguities:	0
Material submitted for sequencing:	WRL-LFBK1
Harvest date of material:	27/07/2021
Primers:	SAT1U-OS/SAT-2B208R, FMD-3161F/FMD-4303R
Received for sequencing:	12/08/2021
Created:	24/08/2021
Last updated:	24/08/2021
VIBASys IDs: sample 48574, genome 48575, sequence viba_48576, sequencing info 48577	

Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_30745	BUN/1/99	cattle	93.2	0	SAT1	I		
viba_30749	BUN/2/99	cattle	93.2	0	SAT1	I		
viba_30753	BUN/5/99	cattle	93.0	0	SAT1	I		
viba_45587	T33/2016	cattle	93.0	0	SAT1	I		
viba_2991	TAN/21/99	cattle	93.0	0	SAT1	I		
viba_2987	TAN/19/99	cattle	93.0	0	SAT1	I		
viba_45563	T82/2016	cattle	93.0	0	SAT1	I		
viba_2995	TAN/25/99	cattle	93.0	0	SAT1	I		
viba_45575	T94/2016	cattle	92.8	0	SAT1	I		
viba_3011	TAN/51/99	cattle	92.8	0	SAT1	I		

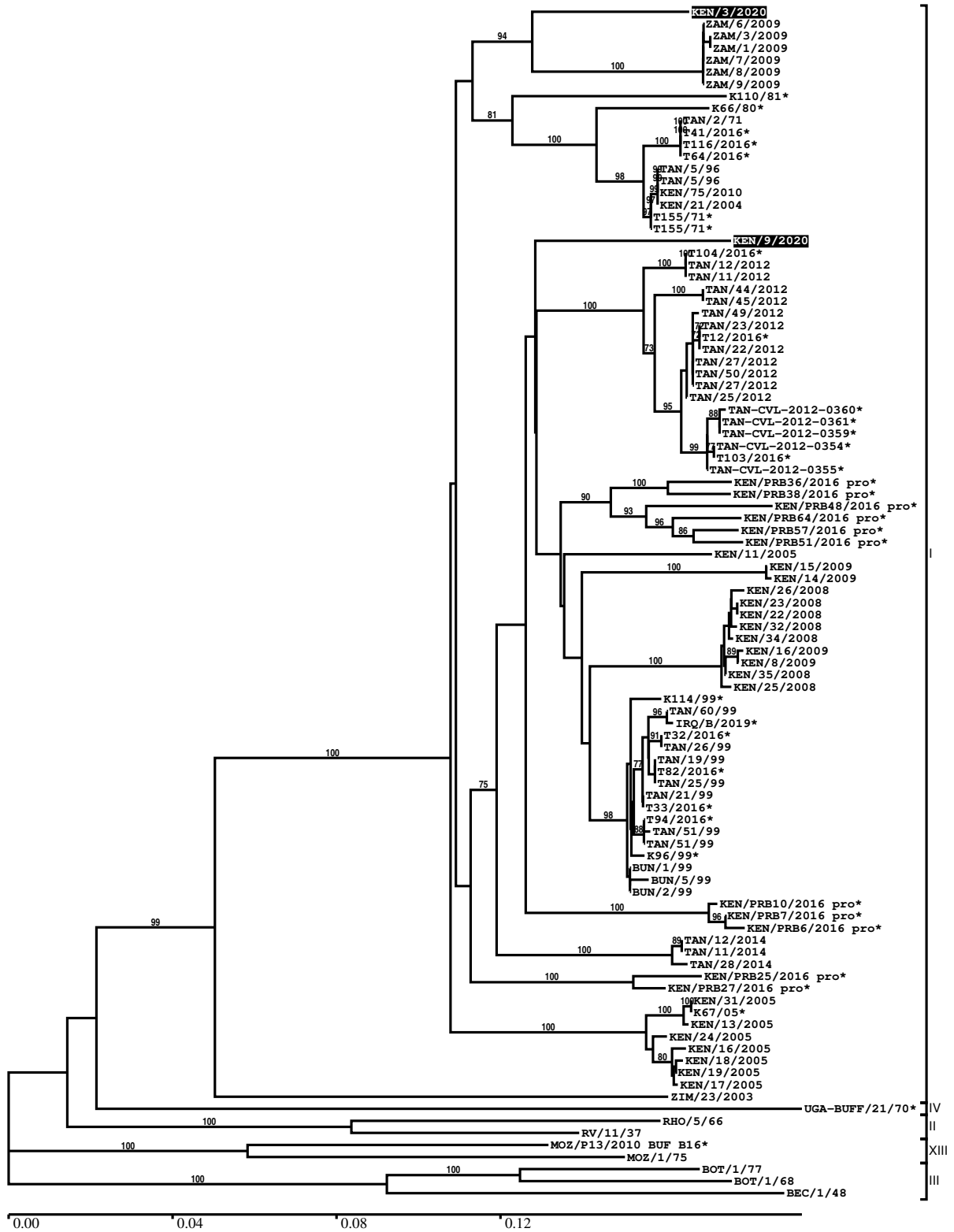
Most Closely Related Prototype Sequences

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

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_466	T155/71	cattle	89.1	0	SAT1	I		
viba_243	ZIM/23/2003		80.9	0	SAT1	I		
viba_462	RV/11/37	greater kudu	77.1	0	SAT1	II		
viba_495	BOT/1/68	bovine	76.0	0	SAT1	III		
viba_16635	MOZ/P13/2010 BUF B16	African buffalo	75.5	0	SAT1	XIII		
viba_514	UGA-BUFF/21/70	African buffalo	75.1	0	SAT1	IV		
viba_709	RHO/5/66	bovine	75.0	0	SAT1	II		
viba_509	BOT/1/77	bovine	74.8	0	SAT1	III		
viba_212	BEC/1/48		73.6	0	SAT1	III		
viba_30769	MOZ/1/75	cattle	73.4	0	SAT1	XIII		

Report on FMDV SAT1 in Kenya in 2020

Batch: WRLFMD/2021/00010



*, not a WRLFMD Reference Number

Analysis Parameters

VP1 subsequence extractor:	vp1_SAT1
Query sequence set:	WRLFMD/2021/00010-Kenya-SAT1 (2 sequences)
Sequence database set:	allseqs_SAT1 (794 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:	657
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
KEN/3/2020	n/a	cattle	WRLFMD	Kenya	I
ZAM/6/2009	n/a	cattle	WRLFMD	Zambia	I
ZAM/3/2009	n/a	cattle	WRLFMD	Zambia	I
ZAM/1/2009	n/a	cattle	WRLFMD	Zambia	I
ZAM/7/2009	n/a	cattle	WRLFMD	Zambia	I
ZAM/8/2009	n/a	cattle	WRLFMD	Zambia	I
ZAM/9/2009	n/a	cattle	WRLFMD	Zambia	I
K110/81*	HQ267521	n/a	n/a	Kenya	I
K66/80*	HQ267520	n/a	n/a	Kenya	I
TAN/2/71	KF561707	cattle	WRLFMD	Tanzania	I
T41/2016*	MH936366	cattle	PAU	Tanzania	I
T116/2016*	MH931420	cattle	PAU	Tanzania	I
T64/2016*	MH931407	cattle	PAU	Tanzania	I
TAN/5/96	AY442007	cattle	OVI	Tanzania	I
TAN/5/96	KF561711	cattle	WRLFMD	Tanzania	I
KEN/75/2010	KR188468	cattle	WRLFMD	Kenya	I
KEN/21/2004	KR188451	cattle	WRLFMD	Kenya	I
T155/71*	KF561706	cattle	WRLFMD	Tanzania	I
T155/71*	HQ267519	cattle	n/a	Tanzania	I
KEN/9/2020	n/a	cattle	WRLFMD	Kenya	I
T104/2016*	MH936372	cattle	PAU	Tanzania	I
TAN/12/2012	MF592609	cattle	n/a	Tanzania	I
TAN/11/2012	MF592608	cattle	n/a	Tanzania	I
TAN/44/2012	MF592627	cattle	WRLFMD	Tanzania	I
TAN/45/2012	MF592628	cattle	WRLFMD	Tanzania	I
TAN/49/2012	MF592629	cattle	WRLFMD	Tanzania	I
TAN/23/2012	MF592617	cattle	n/a	Tanzania	I
T12/2016*	MH936370	cattle	PAU	Tanzania	I
TAN/22/2012	MF592616	cattle	n/a	Tanzania	I
TAN/27/2012	MF592644	cattle	WRLFMD	Tanzania	I
TAN/50/2012	MF592630	cattle	WRLFMD	Tanzania	I
TAN/27/2012	n/a	cattle	WRLFMD	Tanzania	I
TAN/25/2012	MF592618	cattle	n/a	Tanzania	I
TAN-CVL-2012-0360*	n/a	bovine	CVL	Tanzania	I
TAN-CVL-2012-0361*	n/a	bovine	CVL	Tanzania	I
TAN-CVL-2012-0359*	n/a	bovine	CVL	Tanzania	I

continued on next page

label	accession	host(s)	lab	country	taxonomic information
TAN-CVL-2012-0354*	n/a	bovine	CVL	Tanzania	I
T103/2016*	MH936368	cattle	PAU	Tanzania	I
TAN-CVL-2012-0355*	n/a	bovine	CVL	Tanzania	I
KEN/PRB36/2016 pro*	MH882593	African buffalo	PIADC	Kenya	I
KEN/PRB38/2016 pro*	MH882595	African buffalo	PIADC	Kenya	I
KEN/PRB48/2016 pro*	MH882597	African buffalo	PIADC	Kenya	I
KEN/PRB64/2016 pro*	MH882605	African buffalo	PIADC	Kenya	I
KEN/PRB57/2016 pro*	MH882601	African buffalo	PIADC	Kenya	I
KEN/PRB51/2016 pro*	MH882599	African buffalo	PIADC	Kenya	I
KEN/11/2005	n/a	cattle	WRLFMD	Kenya	I
KEN/15/2009	n/a	cattle	WRLFMD	Kenya	I
KEN/14/2009	n/a	cattle	WRLFMD	Kenya	I
KEN/26/2008	n/a	cattle	WRLFMD	Kenya	I
KEN/23/2008	n/a	cattle	WRLFMD	Kenya	I
KEN/22/2008	KR188455	cattle	WRLFMD	Kenya	I
KEN/32/2008	n/a	cattle	WRLFMD	Kenya	I
KEN/34/2008	n/a	cattle	WRLFMD	Kenya	I
KEN/16/2009	n/a	cattle	WRLFMD	Kenya	I
KEN/8/2009	n/a	cattle	WRLFMD	Kenya	I
KEN/35/2008	n/a	cattle	WRLFMD	Kenya	I
KEN/25/2008	n/a	cattle	WRLFMD	Kenya	I
K114/99*	HQ267524	n/a	n/a	Kenya	I
TAN/60/99	KF561721	wildebeest	WRLFMD	Tanzania	I
IRQ/B/2019*	MT000990	bovine	UNIV- MOSUL	Iraq	I
T32/2016*	MH931413	cattle	PAU	Tanzania	I
TAN/26/99	KF561717	cattle	WRLFMD	Tanzania	I
TAN/19/99	KF561714	cattle	WRLFMD	Tanzania	I
T82/2016*	MH931411	cattle	PAU	Tanzania	I
TAN/25/99	KF561716	cattle	WRLFMD	Tanzania	I
TAN/21/99	KF561715	cattle	WRLFMD	Tanzania	I
T33/2016*	MH931418	cattle	PAU	Tanzania	I
T94/2016*	MH931415	cattle	PAU	Tanzania	I
TAN/51/99	AY442004	cattle	OVI	Tanzania	I
TAN/51/99	KF561720	cattle	WRLFMD	Tanzania	I
K96/99*	HQ267523	n/a	n/a	Kenya	I
BUN/1/99	n/a	cattle	WRLFMD	Burundi	I
BUN/5/99	n/a	cattle	WRLFMD	Burundi	I
BUN/2/99	n/a	cattle	WRLFMD	Burundi	I
KEN/PRB10/2016 pro*	MH882582	African buffalo	PIADC	Kenya	I
KEN/PRB7/2016 pro*	MH882606	African buffalo	PIADC	Kenya	I
KEN/PRB6/2016 pro*	MH882603	African buffalo	PIADC	Kenya	I
TAN/12/2014	MF592673	bovine	WRLFMD	Tanzania	I
TAN/11/2014	MF592672	bovine	WRLFMD	Tanzania	I
TAN/28/2014	MF592686	bovine	WRLFMD	Tanzania	I
KEN/PRB25/2016 pro*	MH882585	African buffalo	PIADC	Kenya	I
KEN/PRB27/2016 pro*	MH882587	African buffalo	PIADC	Kenya	I
KEN/31/2005	n/a	cattle	WRLFMD	Kenya	I
K67/05*	HQ267526	cattle	n/a	Kenya	I
KEN/13/2005	n/a	cattle	WRLFMD	Kenya	I
KEN/24/2005	n/a	cattle	WRLFMD	Kenya	I
KEN/16/2005	n/a	cattle	WRLFMD	Kenya	I
KEN/18/2005	n/a	cattle	WRLFMD	Kenya	I
KEN/19/2005	n/a	cattle	WRLFMD	Kenya	I
KEN/17/2005	n/a	cattle	WRLFMD	Kenya	I
ZIM/23/2003	KF219690	n/a	WRLFMD	Zimbabwe	I
UGA-BUFF/21/70*	KF219682	African buffalo	WRLFMD	Uganda	IV
RHO/5/66	AY593846	bovine	PIADC	Rhodesia	II
RV/11/37	AY593839	greater kudu	PIADC	Rhodesia (RV)	II
MOZ/P13/2010 BUF B16*	KF219691	African buffalo	WRLFMD	Mozambique	XIII
MOZ/1/75	MG972461	cattle	WRLFMD	Mozambique	XIII
BOT/1/77	KF219686	bovine	WRLFMD	Botswana	III
BOT/1/68	AY593845	bovine	PIADC	Botswana	III
BEC/1/48	AY593838	n/a	PIADC	Bechuanaland	III

*, not a WRLFMD Reference Number

n/a, not available