

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

Genotyping Report

FMDV serotype: SAT1
Country: Malawi
Year: 2016
Batch: WRLFMD/2017/00025
No. of sequences: 1
Report date: 9th November 2017
Report generated by: Nick Knowles
Report checked by: Kasia Bankowska



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

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Virus sample name:	MAL/1/2016
Sender reference:	MAL01/16
Location of origin:	Bangula Diptank, Nsanje
Country of origin:	Malawi
Date of collection:	02/01/2016
Host species:	cattle
Serotype:	SAT1
Topotype:	I
Lineage:	
Sublineage:	
Sequence length:	657
Ambiguities:	0
Material submitted for sequencing:	BTy1
Harvest date of material:	24/10/2017
Primers:	SAT1-1C559F/SAT-2B208R; SAT1U-OS/SAT-2B208R; FMD-3161F/FMD-4303R
Received for sequencing:	30/10/2017
Created:	09/11/2017
Last updated:	09/11/2017
VIBASys IDs: sample 35244, genome 35245, sequence viba_35246, sequencing info 35247	

Most Closely Related Sequences

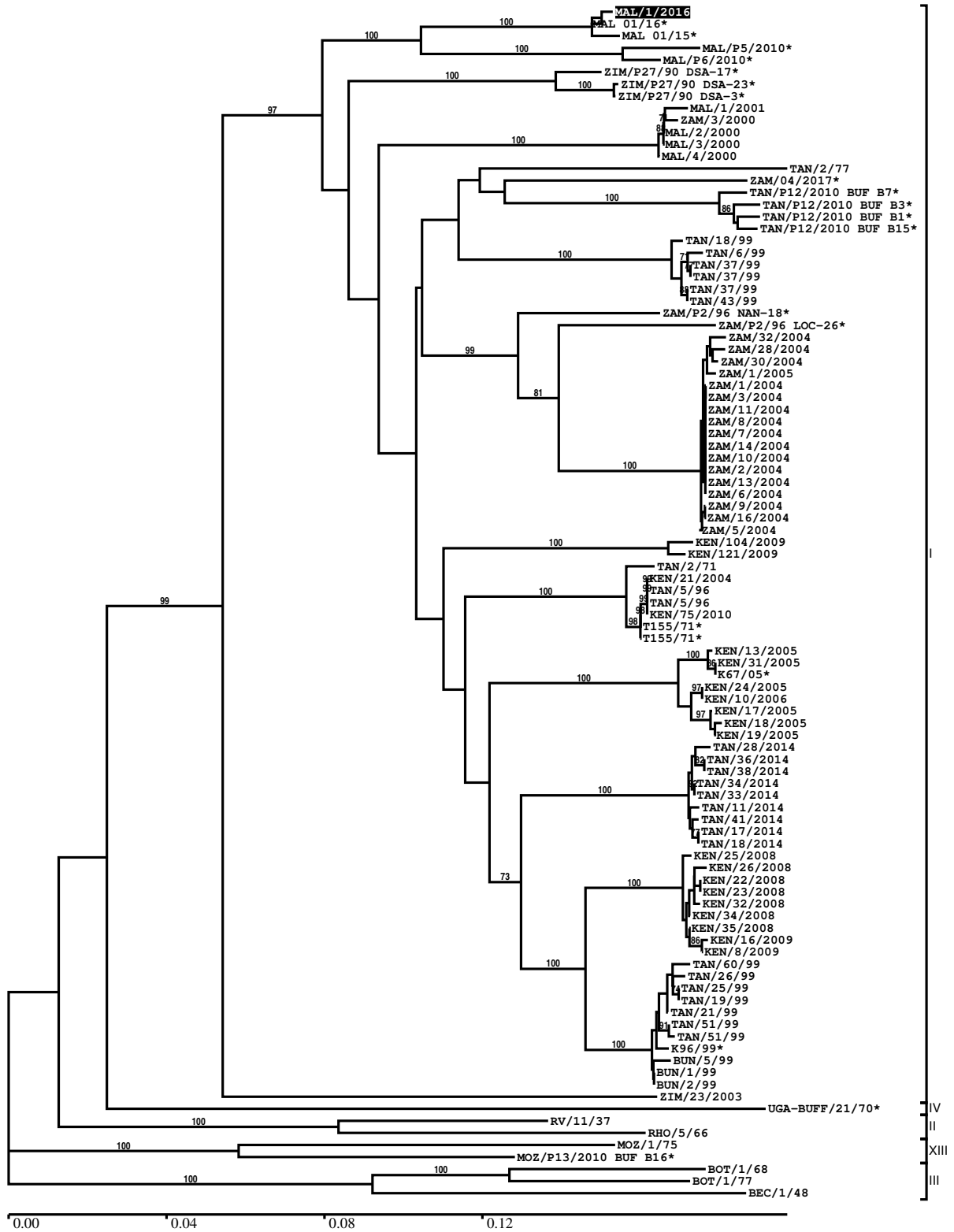
sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_26350	MAL 01/15	cattle	99.1	0	SAT1	I		
viba_23880	MAL 01/16	cattle	91.6	0	SAT1	I		
viba_16630	MAL/P6/2010	african buffalo	89.5	0	SAT1	I		
viba_16626	MAL/P5/2010	african buffalo	89.3	0	SAT1	I		
viba_3089	ZAM/P2/96 NAN-18	african buffalo	87.2	0	SAT1	I		
viba_16659	TAN/P12/2010 BUF B15	african buffalo	86.8	0	SAT1	I		
viba_16651	TAN/P12/2010 BUF B3	african buffalo	86.8	0	SAT1	I		
viba_16647	TAN/P12/2010 BUF B1	african buffalo	86.6	0	SAT1	I		
viba_16655	TAN/P12/2010 BUF B7	african buffalo	86.6	0	SAT1	I		
viba_2983	TAN/18/99	cattle	86.6	0	SAT1	I		

Most Closely Related Prototype Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
	see http://www.wrlfmd.org/fmd_genotyping/prototypes.htm							
viba_466	T155/71	cattle	86.0	0	SAT1	I		
viba_243	ZIM/23/2003		80.9	0	SAT1	I		
viba_462	RV/11/37	greater kudu	78.1	0	SAT1	II		
viba_514	UGA-BUFF/21/70	african buffalo	76.9	0	SAT1	IV		
viba_16635	MOZ/P13/2010 BUF B16	african buffalo	76.3	0	SAT1	XIII		
viba_30769	MOZ/1/75	cattle	75.3	0	SAT1	XIII		
viba_709	RHO/5/66	bovine	74.9	0	SAT1	II		
viba_495	BOT/1/68	bovine	74.8	0	SAT1	III		
viba_509	BOT/1/77	bovine	74.3	0	SAT1	III		
viba_212	BEC/1/48		74.2	0	SAT1	III		

Report on FMDV SAT1 in Malawi in 2016

Batch: WRLFMD/2017/00025



*, not a WRLFMD Reference Number

Analysis Parameters

VP1 subsequence extractor:	vp1_SAT1
Query sequence set:	WRLFMD/2017/00025-Malawi-SAT1 (1 sequences)
Sequence database set:	allseqs_SAT1 (623 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
MAL/1/2016	n/a	cattle	WRLFMD	Malawi	I
MAL 01/16*	n/a	cattle	BVI	Malawi	I
MAL 01/15*	n/a	cattle	BVI	Malawi	I
MAL/P5/2010*	n/a	african buffalo	WRLFMD	Malawi	I
MAL/P6/2010*	n/a	african buffalo	WRLFMD	Malawi	I
ZIM/P27/90 DSA-17*	n/a	african buffalo	WRLFMD	Zimbabwe	I
ZIM/P27/90 DSA-23*	n/a	african buffalo	WRLFMD	Zimbabwe	I
ZIM/P27/90 DSA-3*	n/a	african buffalo	WRLFMD	Zimbabwe	I
MAL/1/2001	n/a	bovine	WRLFMD	Malawi	I
ZAM/3/2000	n/a	bovine	WRLFMD	Zambia	I
MAL/2/2000	n/a	bovine	WRLFMD	Malawi	I
MAL/3/2000	n/a	bovine	WRLFMD	Malawi	I
MAL/4/2000	n/a	bovine	WRLFMD	Malawi	I
TAN/2/77	KF561708	cattle	WRLFMD	Tanzania	I
ZAM/04/2017*	n/a	bovine	BVI	Zambia	I
TAN/P12/2010 BUF B7*	MF592595	african buffalo	WRLFMD	Tanzania	I
TAN/P12/2010 BUF B3*	MF592594	african buffalo	WRLFMD	Tanzania	I
TAN/P12/2010 BUF B1*	MF592593	african buffalo	WRLFMD	Tanzania	I
TAN/P12/2010 BUF B15*	MF592596	african buffalo	WRLFMD	Tanzania	I
TAN/18/99	KF561713	cattle	WRLFMD	Tanzania	I
TAN/6/99	KF561712	cattle	WRLFMD	Tanzania	I
TAN/37/99	KF561718	cattle	WRLFMD	Tanzania	I
TAN/37/99	DQ009718	cattle	OVI	Tanzania	I
TAN/37/99	AY442005	cattle	OVI	Tanzania	I
TAN/43/99	KF561719	cattle	WRLFMD	Tanzania	I
ZAM/P2/96 NAN-18*	n/a	african buffalo	WRLFMD	Zambia	I
ZAM/P2/96 LOC-26*	n/a	african buffalo	WRLFMD	Zambia	I
ZAM/32/2004	n/a	cattle	WRLFMD	Zambia	I
ZAM/28/2004	n/a	cattle	WRLFMD	Zambia	I
ZAM/30/2004	n/a	cattle	WRLFMD	Zambia	I
ZAM/1/2005	n/a	cattle	WRLFMD	Zambia	I
ZAM/1/2004	n/a	bovine	WRLFMD	Zambia	I
ZAM/3/2004	n/a	bovine	WRLFMD	Zambia	I
ZAM/11/2004	n/a	bovine	WRLFMD	Zambia	I
ZAM/8/2004	n/a	bovine	WRLFMD	Zambia	I
ZAM/7/2004	n/a	bovine	WRLFMD	Zambia	I

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label	accession	host(s)	lab	country	taxonomic information
ZAM/14/2004	n/a	bovine	WRLFMD	Zambia	I
ZAM/10/2004	n/a	bovine	WRLFMD	Zambia	I
ZAM/2/2004	n/a	bovine	WRLFMD	Zambia	I
ZAM/13/2004	n/a	bovine	WRLFMD	Zambia	I
ZAM/6/2004	n/a	bovine	WRLFMD	Zambia	I
ZAM/9/2004	n/a	bovine	WRLFMD	Zambia	I
ZAM/16/2004	n/a	bovine	WRLFMD	Zambia	I
ZAM/5/2004	n/a	bovine	WRLFMD	Zambia	I
KEN/104/2009	n/a	cattle	WRLFMD	Kenya	I
KEN/121/2009	n/a	cattle	WRLFMD	Kenya	I
TAN/2/71	KF561707	cattle	WRLFMD	Tanzania	I
KEN/21/2004	KR188451	cattle	WRLFMD	Kenya	I
TAN/5/96	KF561711	cattle	WRLFMD	Tanzania	I
TAN/5/96	AY442007	cattle	OVI	Tanzania	I
KEN/75/2010	KR188468	cattle	WRLFMD	Kenya	I
T155/71*	HQ267519	cattle	n/a	Tanzania	I
T155/71*	KF561706	cattle	WRLFMD	Tanzania	I
KEN/13/2005	n/a	cattle	WRLFMD	Kenya	I
KEN/31/2005	n/a	cattle	WRLFMD	Kenya	I
K67/05*	HQ267526	cattle	n/a	Kenya	I
KEN/24/2005	n/a	cattle	WRLFMD	Kenya	I
KEN/10/2006	KR188454	cattle	WRLFMD	Kenya	I
KEN/17/2005	n/a	cattle	WRLFMD	Kenya	I
KEN/18/2005	n/a	cattle	WRLFMD	Kenya	I
KEN/19/2005	n/a	cattle	WRLFMD	Kenya	I
TAN/28/2014	MF592686	bovine	WRLFMD	Tanzania	I
TAN/36/2014	MF592693	bovine	WRLFMD	Tanzania	I
TAN/38/2014	MF592695	bovine	WRLFMD	Tanzania	I
TAN/34/2014	MF592691	bovine	WRLFMD	Tanzania	I
TAN/33/2014	MF592690	bovine	WRLFMD	Tanzania	I
TAN/11/2014	MF592672	bovine	WRLFMD	Tanzania	I
TAN/41/2014	MF592696	bovine	WRLFMD	Tanzania	I
TAN/17/2014	MF592677	bovine	WRLFMD	Tanzania	I
TAN/18/2014	MF592678	bovine	WRLFMD	Tanzania	I
KEN/25/2008	n/a	cattle	WRLFMD	Kenya	I
KEN/26/2008	n/a	cattle	WRLFMD	Kenya	I
KEN/22/2008	KR188455	cattle	WRLFMD	Kenya	I
KEN/23/2008	n/a	cattle	WRLFMD	Kenya	I
KEN/32/2008	n/a	cattle	WRLFMD	Kenya	I
KEN/34/2008	n/a	cattle	WRLFMD	Kenya	I
KEN/35/2008	n/a	cattle	WRLFMD	Kenya	I
KEN/16/2009	n/a	cattle	WRLFMD	Kenya	I
KEN/8/2009	n/a	cattle	WRLFMD	Kenya	I
TAN/60/99	KF561721	wildebeest	WRLFMD	Tanzania	I
TAN/26/99	KF561717	cattle	WRLFMD	Tanzania	I
TAN/25/99	KF561716	cattle	WRLFMD	Tanzania	I
TAN/19/99	KF561714	cattle	WRLFMD	Tanzania	I
TAN/21/99	KF561715	cattle	WRLFMD	Tanzania	I
TAN/51/99	KF561720	cattle	WRLFMD	Tanzania	I
TAN/51/99	AY442004	cattle	OVI	Tanzania	I
K96/99*	HQ267523	n/a	n/a	Kenya	I
BUN/5/99	n/a	cattle	WRLFMD	Burundi	I
BUN/1/99	n/a	cattle	WRLFMD	Burundi	I
BUN/2/99	n/a	cattle	WRLFMD	Burundi	I
ZIM/23/2003	KF219690	n/a	WRLFMD	Zimbabwe	I
UGA-BUFF/21/70*	KF219682	african buffalo	WRLFMD	Uganda	IV
RV/11/37	AY593839	greater kudu	PIADC	Rhodesia (RV)	II
RHO/5/66	AY593846	bovine	PIADC	Rhodesia	II
MOZ/1/75	n/a	cattle	WRLFMD	Mozambique	XIII
MOZ/P13/2010 BUF B16*	KF219691	african buffalo	WRLFMD	Mozambique	XIII
BOT/1/68	AY593845	bovine	PIADC	Botswana	III
BOT/1/77	KF219686	bovine	WRLFMD	Botswana	III
BEC/1/48	AY593838	n/a	PIADC	Bechuanaland	III

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