

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

Genotyping Report

FMDV serotype: SAT1
Country: Botswana
Year: 2023
Batch: WRLMEG/2023/00032
No. of sequences: 1
Report date: 16th October 2023
Report generated by: Nick Knowles
Report checked by: Don King



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

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Virus sample name:	BOT/P/04/2023
Sender reference:	BOT/P/04/2023
Location of origin:	Nata, Central District
Country of origin:	Botswana
Date of collection:	19/09/2023
Host species:	African buffalo
Serotype:	SAT1
Topotype:	III
Lineage:	
Sublineage:	
Sequence length:	657
Ambiguities:	0
Material submitted for sequencing:	n/a
Harvest date of material:	n/a
Primers:	16/10/2023
Received for sequencing:	n/a
Created:	16/10/2023
Last updated:	16/10/2023
VIBASys IDs: sample 54486, genome 54487, sequence viba_54488, sequencing info 54489	

Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_25574	BOT/2/2015	bovine	94.1	0	SAT1	III		
viba_29639	BOT/4/2015	bovine	94.1	0	SAT1	III		
viba_29643	BOT/5/2015	bovine	93.9	0	SAT1	III		
viba_25570	BOT/1/2015	bovine	93.9	0	SAT1	III		
viba_25583	BOT/13/2015	cattle	93.9	1	SAT1	III		
viba_25579	BOT/11/2015	cattle	93.6	2	SAT1	III		
viba_5010	NMB/1/2000	bovine	92.8	0	SAT1	III		
viba_48806	ZAM/2/92	bovine	91.9	0	SAT1	III		
viba_4981	BOT/P3/2000 NGO-2	African buffalo	91.6	0	SAT1	III		
viba_3117	ZIM/P12/90 A-10	African buffalo	91.2	0	SAT1	III		

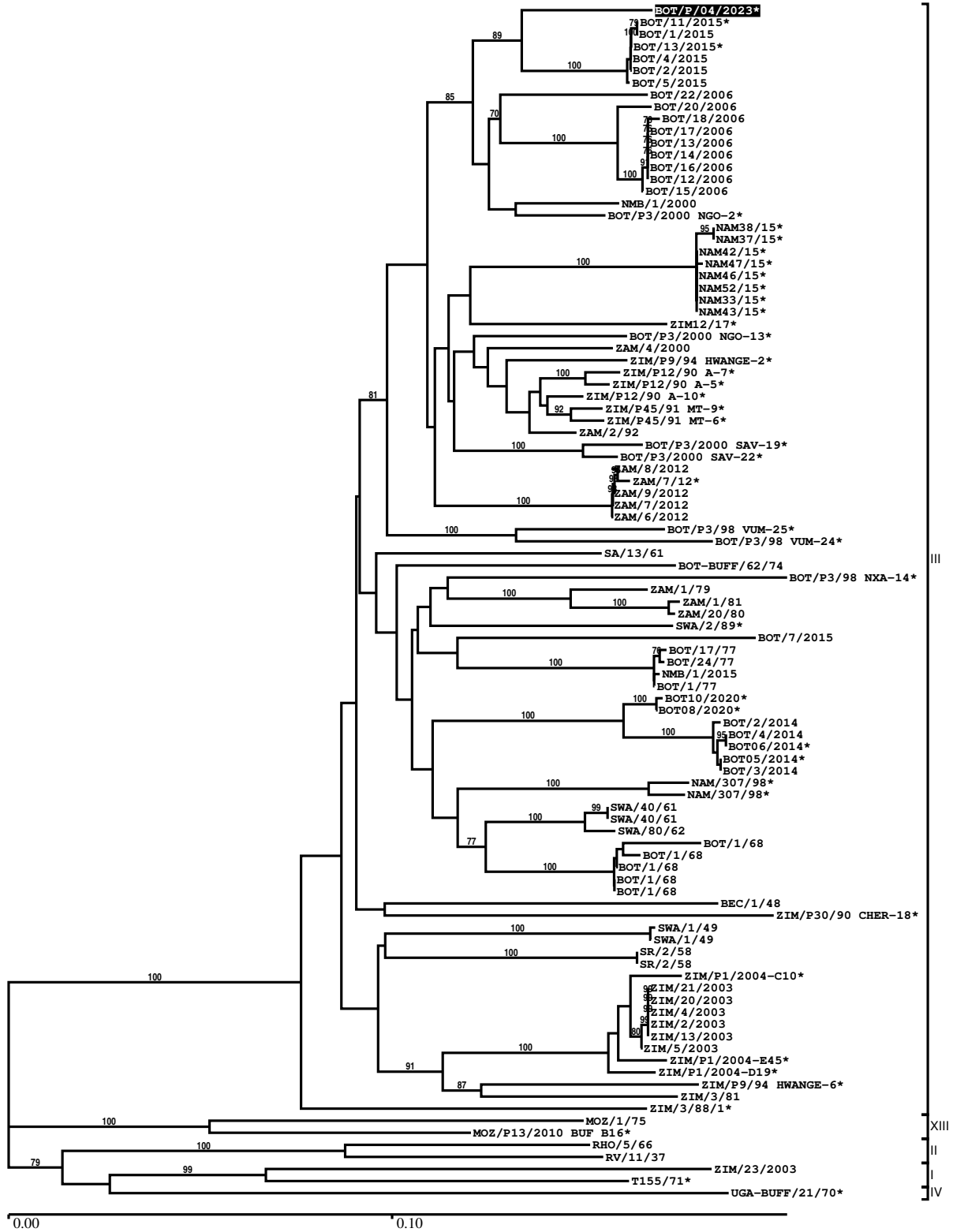
Most Closely Related Prototype Sequences

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

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_495	BOT/1/68	bovine	86.1	0	SAT1	III		
viba_509	BOT/1/77	bovine	85.3	0	SAT1	III		
viba_212	BEC/1/48		84.6	0	SAT1	III		
viba_16635	MOZ/P13/2010 BUF B16	African buffalo	77.5	0	SAT1	XIII		
viba_709	RHO/5/66	bovine	76.7	0	SAT1	II		
viba_462	RV/11/37	greater kudu	76.3	0	SAT1	II		
viba_466	T155/71	cattle	75.7	0	SAT1	I		
viba_30769	MOZ/1/75	cattle	74.9	0	SAT1	XIII		
viba_243	ZIM/23/2003		73.6	0	SAT1	I		
viba_514	UGA-BUFF/21/70	African buffalo	72.4	0	SAT1	IV		

Report on FMDV SAT1 in Botswana in 2023

Batch: WRLMEG/2023/00032



*, not a WRLFMD Reference Number

Analysis Parameters

VP1 subsequence extractor:	vp1_SAT1
Query sequence set:	WRLMEG/2023/00032-Botswana-SAT1 (1 sequences)
Sequence database set:	allseqs_SAT1 (808 sequences)
Prototype sequence set:	!prototypes_SAT1 (20 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
BOT/P/04/2023*	n/a	African buffalo	BVI	Botswana	III
BOT/11/2015*	n/a	cattle	BVI	Botswana	III
BOT/1/2015	n/a	bovine	WRLFMD	Botswana	III
BOT/13/2015*	n/a	cattle	BVI	Botswana	III
BOT/4/2015	n/a	bovine	WRLFMD	Botswana	III
BOT/2/2015	n/a	bovine	WRLFMD	Botswana	III
BOT/5/2015	n/a	bovine	WRLFMD	Botswana	III
BOT/22/2006	n/a	African buffalo	WRLFMD	Botswana	III
BOT/20/2006	n/a	African buffalo	WRLFMD	Botswana	III
BOT/18/2006	n/a	cattle	WRLFMD	Botswana	III
BOT/17/2006	n/a	cattle	WRLFMD	Botswana	III
BOT/13/2006	n/a	cattle	WRLFMD	Botswana	III
BOT/14/2006	n/a	cattle	WRLFMD	Botswana	III
BOT/16/2006	n/a	cattle	WRLFMD	Botswana	III
BOT/12/2006	n/a	cattle	WRLFMD	Botswana	III
BOT/15/2006	n/a	cattle	WRLFMD	Botswana	III
NMB/1/2000	n/a	bovine	WRLFMD	Namibia	III
BOT/P3/2000 NGO-2*	n/a	African buffalo	WRLFMD	Botswana	III
NAM38/15*	n/a	cattle	BVI	Namibia (NAM)	III
NAM37/15*	n/a	cattle	BVI	Namibia (NAM)	III
NAM42/15*	n/a	cattle	BVI	Namibia (NAM)	III
NAM47/15*	n/a	cattle	BVI	Namibia (NAM)	III
NAM46/15*	n/a	cattle	BVI	Namibia (NAM)	III
NAM52/15*	n/a	cattle	BVI	Namibia (NAM)	III
NAM33/15*	n/a	cattle	BVI	Namibia (NAM)	III
NAM43/15*	n/a	cattle	BVI	Namibia (NAM)	III
ZIM12/17*	n/a	bovine	BVI	Zimbabwe	III
BOT/P3/2000 NGO-13*	n/a	African buffalo	WRLFMD	Botswana	III
ZAM/4/2000	n/a	bovine	WRLFMD	Zambia	III

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label	accession	host(s)	lab	country	taxonomic information
ZIM/P9/94 HWANGE-2*	n/a	African buffalo	WRLFMD	Zimbabwe	III
ZIM/P12/90 A-7*	n/a	African buffalo	WRLFMD	Zimbabwe	III
ZIM/P12/90 A-5*	n/a	African buffalo	WRLFMD	Zimbabwe	III
ZIM/P12/90 A-10*	n/a	African buffalo	WRLFMD	Zimbabwe	III
ZIM/P45/91 MT-9*	n/a	African buffalo	WRLFMD	Zimbabwe	III
ZIM/P45/91 MT-6*	n/a	African buffalo	WRLFMD	Zimbabwe	III
ZAM/2/92	n/a	bovine	WRLFMD	Zambia	III
BOT/P3/2000 SAV-19*	n/a	African buffalo	WRLFMD	Botswana	III
BOT/P3/2000 SAV-22*	n/a	African buffalo	WRLFMD	Botswana	III
ZAM/8/2012	n/a	bovine	WRLFMD	Zambia	III
ZAM/7/12*	n/a	n/a	BVI	Zambia	III
ZAM/9/2012	n/a	bovine	WRLFMD	Zambia	III
ZAM/7/2012	n/a	bovine	WRLFMD	Zambia	III
ZAM/6/2012	n/a	bovine	WRLFMD	Zambia	III
BOT/P3/98 VUM-25*	n/a	African buffalo	WRLFMD	Botswana	III
BOT/P3/98 VUM-24*	n/a	African buffalo	WRLFMD	Botswana	III
SA/13/61	AY593842	cattle	PIADC	South Africa (SA)	III
BOT-BUFF/62/74	n/a	African buffalo	WRLFMD	Botswana	III
BOT/P3/98 NXA-14*	n/a	African buffalo	WRLFMD	Botswana	III
ZAM/1/79	n/a	n/a	WRLFMD	Zambia	III
ZAM/1/81	n/a	cattle	WRLFMD	Zambia	III
ZAM/20/80	n/a	cattle	WRLFMD	Zambia	III
SWA/2/89*	n/a	African buffalo	WRLFMD	South West Africa	III
BOT/7/2015	n/a	bovine	WRLFMD	Botswana	III
BOT/17/77	KF219687	greater kudu	WRLFMD	Botswana	III
BOT/24/77	KF219688	n/a	WRLFMD	Botswana	III
NMB/1/2015	n/a	bovine	WRLFMD	Namibia	III
BOT/1/77	KF219686	bovine	WRLFMD	Botswana	III
BOT10/2020*	n/a	bovine	BVI	Botswana	III
BOT08/2020*	n/a	bovine	BVI	Botswana	III
BOT/2/2014	n/a	bovine	WRLFMD	Botswana	III
BOT/4/2014	n/a	bovine	WRLFMD	Botswana	III
BOT06/2014*	n/a	cattle	BVI	Botswana	III
BOT05/2014*	n/a	cattle	BVI	Botswana	III
BOT/3/2014	n/a	bovine	WRLFMD	Botswana	III
NAM/307/98*	DQ009717	African buffalo	OVI	Namibia (NAM)	III
NAM/307/98*	AY770519	African buffalo	OVI	Namibia (NAM)	III
SWA/40/61	AY593843	n/a	PIADC	South West Africa	III
SWA/40/61	n/a	n/a	WRLFMD	South West Africa	III
SWA/80/62	n/a	n/a	WRLFMD	South West Africa	III
BOT/1/68	n/a	bovine	Wellcome	Botswana	III
BOT/1/68	Z98203	bovine	WRLFMD	Botswana	III
BOT/1/68	n/a	bovine	WRLFMD	Botswana	III
BOT/1/68	EF134950	bovine	IZSLE	Botswana	III
BOT/1/68	AY593845	bovine	PIADC	Botswana	III
BEC/1/48	AY593838	n/a	PIADC	Bechuanaland	III
ZIM/P30/90 CHER-18*	n/a	African buffalo	WRLFMD	Zimbabwe	III
SWA/1/49	AY593840	n/a	PIADC	South West Africa	III
SWA/1/49	n/a	n/a	WRLFMD	South West Africa	III
SR/2/58	AY593841	n/a	PIADC	Rhodesia (SR)	III
SR/2/58	n/a	n/a	WRLFMD	Rhodesia (SR)	III
ZIM/P1/2004-C10*	n/a	cattle	WRLFMD	Zimbabwe	III
ZIM/21/2003	n/a	n/a	WRLFMD	Zimbabwe	III
ZIM/20/2003	n/a	n/a	WRLFMD	Zimbabwe	III
ZIM/4/2003	n/a	n/a	WRLFMD	Zimbabwe	III
ZIM/2/2003	n/a	n/a	WRLFMD	Zimbabwe	III
ZIM/13/2003	n/a	n/a	WRLFMD	Zimbabwe	III
ZIM/5/2003	n/a	n/a	WRLFMD	Zimbabwe	III

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label	accession	host(s)	lab	country	taxonomic information
ZIM/P1/2004-E45*	n/a	cattle	WRLFMD	Zimbabwe	III
ZIM/P1/2004-D19*	n/a	cattle	WRLFMD	Zimbabwe	III
ZIM/P9/94 HWANGE-6*	n/a	African buffalo	WRLFMD	Zimbabwe	III
ZIM/3/81	n/a	cattle	WRLFMD	Zimbabwe	III
ZIM/3/88/1*	n/a	African buffalo	WRLFMD	Zimbabwe	III
MOZ/1/75	MG972461	cattle	WRLFMD	Mozambique	XIII
MOZ/P13/2010 BUF B16*	KF219691	African buffalo	WRLFMD	Mozambique	XIII
RHO/5/66	AY593846	bovine	PIADC	Rhodesia	II
RV/11/37	AY593839	greater kudu	PIADC	Rhodesia (RV)	II
ZIM/23/2003	KF219690	n/a	WRLFMD	Zimbabwe	I
T155/71*	KF561706	cattle	WRLFMD	Tanzania	I
UGA-BUFF/21/70*	KF219682	African buffalo	WRLFMD	Uganda	IV

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n/a, not available