

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

## Genotyping Report

FMDV serotype: SAT2  
Country: Botswana  
Year: 2017  
Batch: WRLFMD/2017/00023  
No. of sequences: 1  
Report date: 6th November 2017  
Report generated by: Kasia Bankowska  
Report checked by: Nick Knowles



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

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Virus sample name:	BOT/1/2017
Sender reference:	BOT03/2017
Location of origin:	Dingonapel, Sehitwa, Ngamiland
Country of origin:	Botswana
Date of collection:	23/09/2017
Host species:	cattle
Serotype:	SAT2
Topotype:	III
Lineage:	
Sublineage:	
Sequence length:	642
Ambiguities:	0
Material submitted for sequencing:	BTy1
Harvest date of material:	24/10/2017
Primers:	SAT2-1C445F/SAT-2B208R; SAT2-P1-1223F/SAT-2B208R
Received for sequencing:	30/10/2017
Created:	06/11/2017
Last updated:	06/11/2017
VIBASys IDs: sample 35210, genome 35211, sequence viba_35212, sequencing info 35213	

#### Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_34838	BOT/03/2017	cattle	100.0	0	SAT2	III		
viba_29655	BOT/3/2015	bovine	97.2	0	SAT2	III		
viba_25650	BOT07/15	bovine	96.9	1	SAT2	III		
viba_22291	BOT/2/2013	bovine	94.9	0	SAT2	III		
viba_22287	BOT/1/2013	bovine	94.9	0	SAT2	III		
viba_20340	BOT/1/2012	bovine	94.5	0	SAT2	III		
viba_20404	BOT/19/2012	bovine	94.5	0	SAT2	III		
viba_20412	BOT/21/2012	bovine	94.5	0	SAT2	III		
viba_20408	BOT/20/2012	bovine	94.5	0	SAT2	III		
viba_20356	BOT/5/2012	bovine	94.4	0	SAT2	III		

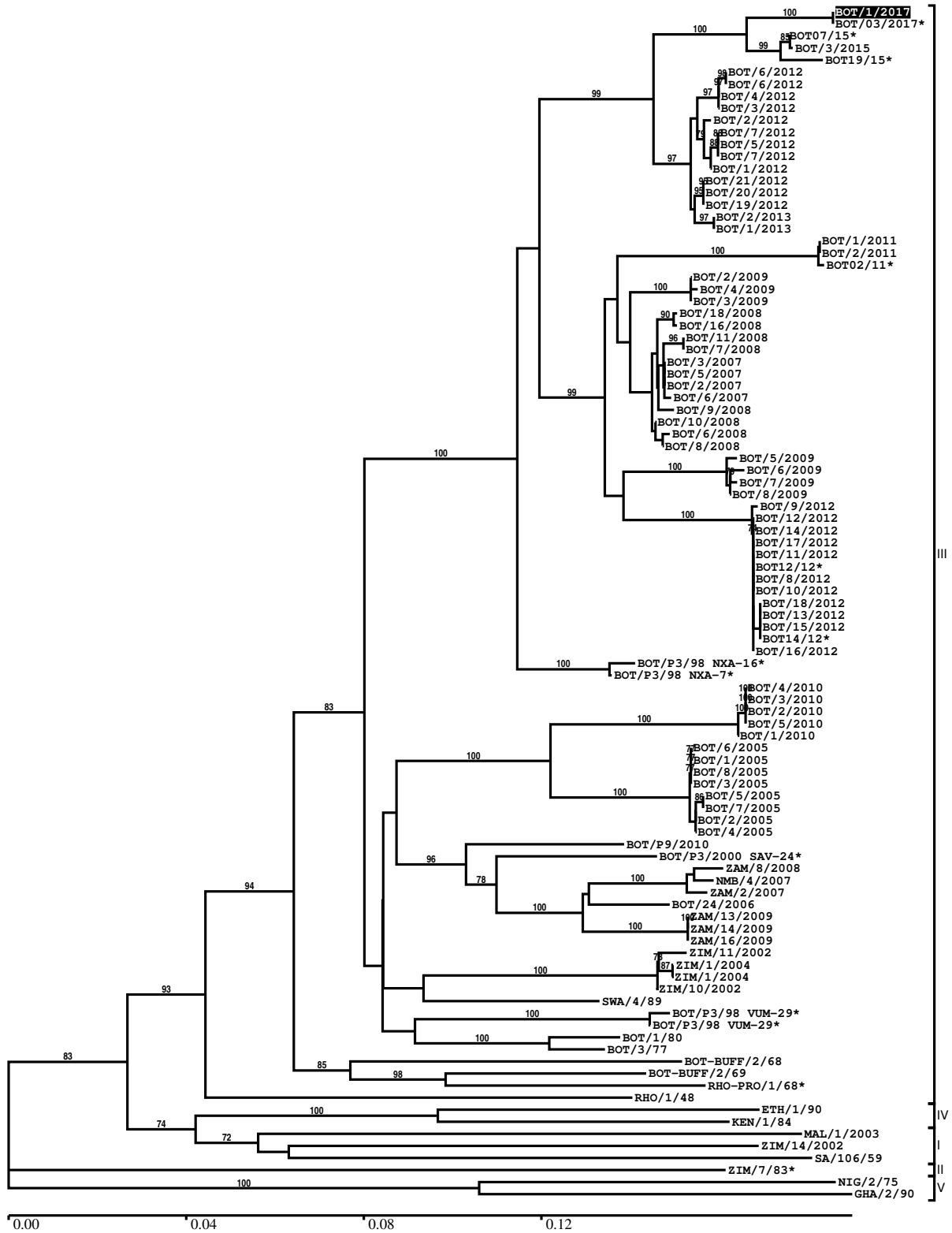
#### Most Closely Related Prototype Sequences

see [http://www.wrlfmd.org/fmd\\_genotyping/prototypes.htm](http://www.wrlfmd.org/fmd_genotyping/prototypes.htm)

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_451	BOT/P3/98 VUM-29	african buffalo	86.0	1	SAT2	III		
viba_380	RHO/1/48		82.0	0	SAT2	III		
viba_111	MAL/1/2003	bovine	80.5	0	SAT2	I		
viba_273	ETH/1/90	bovine	78.6	0	SAT2	IV		
viba_183	ZIM/14/2002	bovine	78.6	0	SAT2	I		
viba_752	SA/106/59		77.6	0	SAT2	I		
viba_248	KEN/1/84	bovine	77.3	0	SAT2	IV		
viba_567	ZIM/7/83	bovine	76.6	0	SAT2	II		
viba_500	NIG/2/75	bovine	75.9	0	SAT2	V		
viba_728	GHA/2/90	bovine	75.3	0	SAT2	V		

Report on FMDV SAT2 in Botswana in 2017

Batch: WRLFMD/2017/00023



\*, not a WRLFMD Reference Number

## Analysis Parameters

VP1 subsequence extractor:	vp1_SAT2
Query sequence set:	WRLFMD/2017/00023-Botswana-SAT2 (1 sequences)
Sequence database set:	allseqs_SAT2 (849 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
BOT/1/2017	n/a	cattle	WRLFMD	Botswana	III
BOT/03/2017*	n/a	cattle	BVI	Botswana	III
BOT07/15*	n/a	bovine	BVI	Botswana	III
BOT/3/2015	n/a	bovine	WRLFMD	Botswana	III
BOT19/15*	n/a	cattle	BVI	Botswana	III
BOT/6/2012	n/a	bovine	WRLFMD	Botswana	III
BOT/6/2012	n/a	bovine	WRLFMD	Botswana	III
BOT/4/2012	n/a	bovine	WRLFMD	Botswana	III
BOT/3/2012	n/a	bovine	WRLFMD	Botswana	III
BOT/2/2012	n/a	bovine	WRLFMD	Botswana	III
BOT/7/2012	n/a	bovine	WRLFMD	Botswana	III
BOT/5/2012	n/a	bovine	WRLFMD	Botswana	III
BOT/7/2012	n/a	bovine	WRLFMD	Botswana	III
BOT/1/2012	n/a	bovine	WRLFMD	Botswana	III
BOT/21/2012	n/a	bovine	WRLFMD	Botswana	III
BOT/20/2012	n/a	bovine	WRLFMD	Botswana	III
BOT/19/2012	n/a	bovine	WRLFMD	Botswana	III
BOT/2/2013	n/a	bovine	WRLFMD	Botswana	III
BOT/1/2013	n/a	bovine	WRLFMD	Botswana	III
BOT/1/2011	n/a	cattle	WRLFMD	Botswana	III
BOT/2/2011	n/a	cattle	WRLFMD	Botswana	III
BOT02/11*	n/a	cattle	BVI	Botswana	III
BOT/2/2009	n/a	cattle	WRLFMD	Botswana	III
BOT/4/2009	n/a	cattle	WRLFMD	Botswana	III
BOT/3/2009	n/a	cattle	WRLFMD	Botswana	III
BOT/18/2008	n/a	cattle	WRLFMD	Botswana	III
BOT/16/2008	n/a	cattle	WRLFMD	Botswana	III
BOT/11/2008	n/a	cattle	WRLFMD	Botswana	III
BOT/7/2008	n/a	cattle	WRLFMD	Botswana	III
BOT/3/2007	n/a	cattle	WRLFMD	Botswana	III
BOT/5/2007	n/a	cattle	WRLFMD	Botswana	III
BOT/2/2007	n/a	cattle	WRLFMD	Botswana	III
BOT/6/2007	n/a	cattle	WRLFMD	Botswana	III
BOT/9/2008	n/a	cattle	WRLFMD	Botswana	III
BOT/10/2008	n/a	cattle	WRLFMD	Botswana	III
BOT/6/2008	n/a	cattle	WRLFMD	Botswana	III

*continued on next page*

label	accession	host(s)	lab	country	taxonomic information
BOT/8/2008	n/a	cattle	WRLFMD	Botswana	III
BOT/5/2009	n/a	n/a	WRLFMD	Botswana	III
BOT/6/2009	n/a	n/a	WRLFMD	Botswana	III
BOT/7/2009	n/a	n/a	WRLFMD	Botswana	III
BOT/8/2009	n/a	n/a	WRLFMD	Botswana	III
BOT/9/2012	n/a	bovine	WRLFMD	Botswana	III
BOT/12/2012	n/a	bovine	WRLFMD	Botswana	III
BOT/14/2012	n/a	bovine	WRLFMD	Botswana	III
BOT/17/2012	n/a	bovine	WRLFMD	Botswana	III
BOT/11/2012	n/a	bovine	WRLFMD	Botswana	III
BOT12/12*	n/a	n/a	BVI	Botswana	III
BOT/8/2012	n/a	bovine	WRLFMD	Botswana	III
BOT/10/2012	n/a	bovine	WRLFMD	Botswana	III
BOT/18/2012	n/a	bovine	WRLFMD	Botswana	III
BOT/13/2012	n/a	bovine	WRLFMD	Botswana	III
BOT/15/2012	n/a	bovine	WRLFMD	Botswana	III
BOT14/12*	n/a	n/a	BVI	Botswana	III
BOT/16/2012	n/a	bovine	WRLFMD	Botswana	III
BOT/P3/98 NXA-16*	n/a	african buffalo	WRLFMD	Botswana	III
BOT/P3/98 NXA-7*	n/a	african buffalo	WRLFMD	Botswana	III
BOT/4/2010	n/a	cattle	WRLFMD	Botswana	III
BOT/3/2010	n/a	cattle	WRLFMD	Botswana	III
BOT/2/2010	n/a	cattle	WRLFMD	Botswana	III
BOT/5/2010	n/a	cattle	WRLFMD	Botswana	III
BOT/1/2010	n/a	cattle	WRLFMD	Botswana	III
BOT/6/2005	n/a	cattle	WRLFMD	Botswana	III
BOT/1/2005	n/a	cattle	WRLFMD	Botswana	III
BOT/8/2005	n/a	cattle	WRLFMD	Botswana	III
BOT/3/2005	n/a	cattle	WRLFMD	Botswana	III
BOT/5/2005	n/a	cattle	WRLFMD	Botswana	III
BOT/7/2005	n/a	cattle	WRLFMD	Botswana	III
BOT/2/2005	n/a	cattle	WRLFMD	Botswana	III
BOT/4/2005	n/a	cattle	WRLFMD	Botswana	III
BOT/P9/2010	n/a	african buffalo	WRLFMD	Botswana	III
BOT/P3/2000 SAV-24*	n/a	african buffalo	WRLFMD	Botswana	III
ZAM/8/2008	n/a	cattle	WRLFMD	Zambia	III
NMB/4/2007	n/a	cattle	WRLFMD	Namibia	III
ZAM/2/2007	n/a	n/a	WRLFMD	Zambia	III
BOT/24/2006	n/a	african buffalo	WRLFMD	Botswana	III
ZAM/13/2009	n/a	cattle	WRLFMD	Zambia	III
ZAM/14/2009	n/a	cattle	WRLFMD	Zambia	III
ZAM/16/2009	n/a	cattle	WRLFMD	Zambia	III
ZIM/11/2002	n/a	bovine	WRLFMD	Zimbabwe	III
ZIM/1/2004	n/a	n/a	WRLFMD	Zimbabwe	III
ZIM/1/2004	n/a	n/a	WRLFMD	Zimbabwe	III
ZIM/10/2002	n/a	bovine	WRLFMD	Zimbabwe	III
SWA/4/89	KF112969	cattle	WRLFMD	South West Africa	III
BOT/P3/98 VUM-29*	AF367124	african buffalo	OVI	Botswana	III
BOT/P3/98 VUM-29*	KY091305	african buffalo	WRLFMD	Botswana	III
BOT/1/80	KF112929	cattle	WRLFMD	Botswana	III
BOT/3/77	KF112928	cattle	OVI	Botswana	III
BOT-BUFF/2/68	n/a	african buffalo	WRLFMD	Botswana	III
BOT-BUFF/2/69	n/a	african buffalo	WRLFMD	Botswana	III
RHO-PRO/1/68*	n/a	n/a	WRLFMD	Rhodesia	III
RHO/1/48	AY593847	n/a	PIADC	Rhodesia	III
ETH/1/90	AY343935	bovine	OVI	Ethiopia	IV
KEN/1/84	AY344505	bovine	OVI	Kenya	IV
MAL/1/2003	n/a	bovine	WRLFMD	Malawi	I
ZIM/14/2002	KF219689	bovine	WRLFMD	Zimbabwe	I
SA/106/59	AY593848	n/a	PIADC	South Africa (SA)	I
ZIM/7/83*	AF136607	bovine	OVI	Zimbabwe	II
NIG/2/75	AF367139	bovine	OVI	Nigeria	V
GHA/2/90	AF479415	bovine	OVI	Ghana	V

\*, not a WRLFMD Reference Number

n/a, not available