

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

Genotyping Report

FMDV serotype: SAT2
Country: Botswana
Year: 2015
Batch: WRLFMD/2016/00019
No. of sequences: 1
Report date: 2nd August 2016
Report generated by: Nick Knowles
Report checked by: Kasia Bankowska

Analysis Parameters

VP1 subsequence extractor: vp1_SAT2
Query sequence set: WRLFMD/2016/00019-Botswana-SAT2 (1 sequences)
Sequence database set: !allseqs_SAT2 (816 sequences)
Prototype sequence set: !prototypes_SAT2 (25 sequences)
Number of related sequences reported: 10
Minimal VP1 subsequence match length: 600
VIBASys version: reflabs-1.0.3



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

email: reporting@pirbright.ac.uk

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Virus sample name:	BOT/3/2015
Sender reference:	BOT 03/15
Location of origin:	Maun, North-West district
Country of origin:	Botswana
Date of collection:	08/03/2015
Host species:	bovine
Serotype:	SAT2
Topotype:	III
Lineage:	
Sublineage:	
Sequence length:	642
Ambiguities:	0
Material submitted for sequencing:	BTy1
Harvest date of material:	01/07/2016
Primers:	SAT2-1C445F/SAT-2B208R; SAT2-P1-1223F/SAT-2B208R
Received for sequencing:	25/07/2016
Created:	26/07/2016
Last updated:	26/07/2016
VIBASys IDs: sample 29653, genome 29654, sequence viba_29655, sequencing info 29656	

Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_25650	BOT07/15	bovine	99.7	1	SAT2	III		
viba_20340	BOT/1/2012	bovine	96.6	0	SAT2	III		
viba_20356	BOT/5/2012	bovine	96.4	0	SAT2	III		
viba_20420	BOT/7/2012	bovine	96.4	0	SAT2	III		
viba_20448	BOT/7/2012	bovine	96.4	0	SAT2	III		
viba_20344	BOT/2/2012	bovine	96.3	0	SAT2	III		
viba_20348	BOT/3/2012	bovine	96.1	0	SAT2	III		
viba_20352	BOT/4/2012	bovine	96.1	0	SAT2	III		
viba_22287	BOT/1/2013	bovine	96.1	0	SAT2	III		
viba_22291	BOT/2/2013	bovine	96.1	0	SAT2	III		

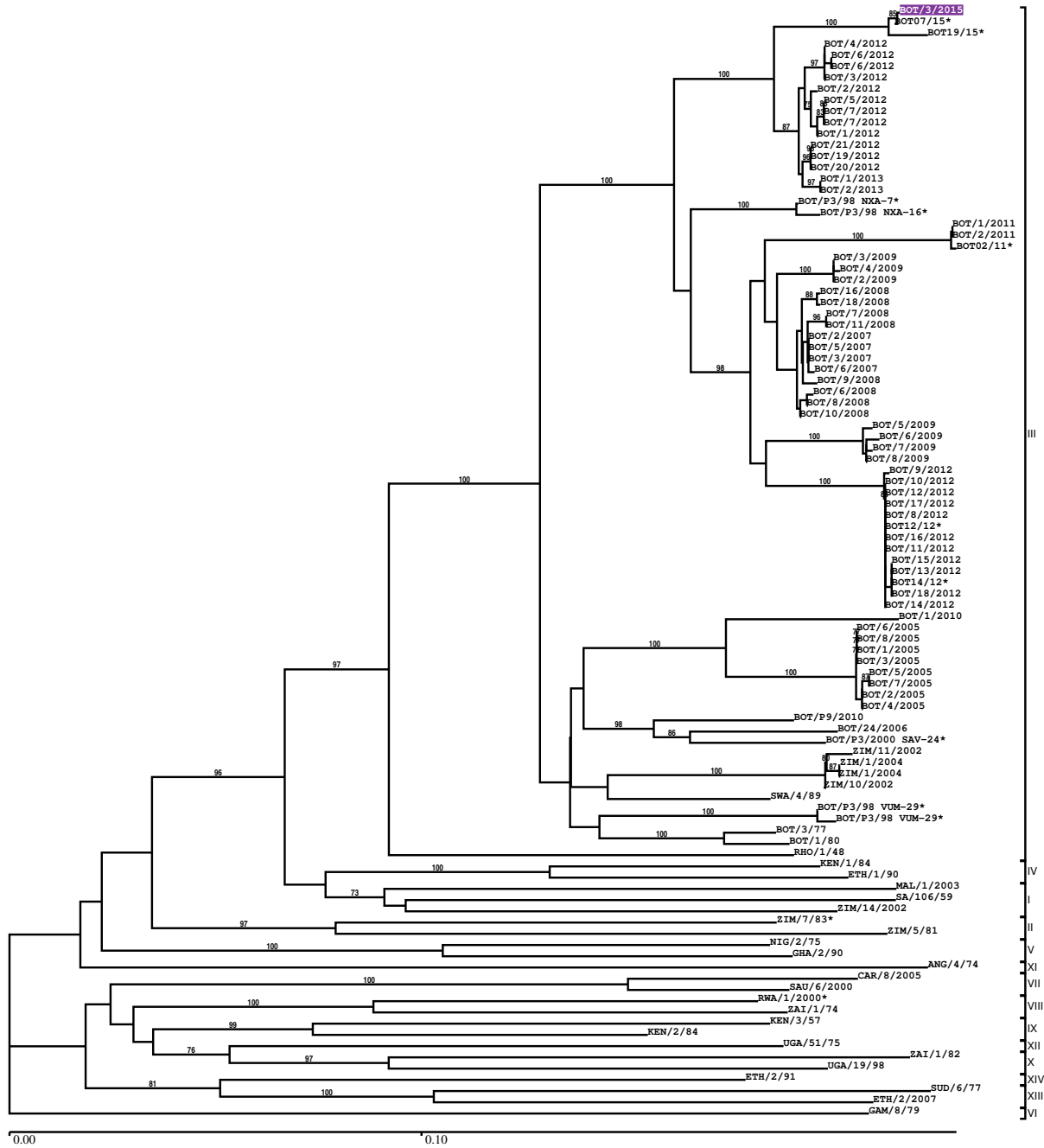
Most Closely Related Prototype Sequences

see 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	86.1	1	SAT2	III		
viba_380	RHO/1/48		82.3	0	SAT2	III		
viba_111	MAL/1/2003	bovine	80.3	0	SAT2	I		
viba_183	ZIM/14/2002	bovine	79.7	0	SAT2	I		
viba_273	ETH/1/90	bovine	79.1	0	SAT2	IV		
viba_248	KEN/1/84	bovine	78.0	0	SAT2	IV		
viba_752	SA/106/59		77.5	0	SAT2	I		
viba_567	ZIM/7/83	bovine	76.2	0	SAT2	II		
viba_500	NIG/2/75	bovine	76.0	0	SAT2	V		
viba_728	GHA/2/90	bovine	76.0	0	SAT2	V		

Report on FMDV SAT2 in Botswana in 2015

Batch: WRLFMD/2016/00019



Sequence alignment method: muscle (default parameters)
 Phylogeny reconstruction method: fdnadist, fneighbor
 Number of bootstrap samples: 1000
 Displaying bootstrap values above: 70.0%
 Number of sequences in tree capped at: 100
 *, not a WRLFMD Reference Number

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/3/2015	n/a	bovine	WRLFMD	Botswana	III
BOT07/15*	n/a	bovine	BVI	Botswana	III
BOT19/15*	n/a	cattle	BVI	Botswana	III
BOT/4/2012	n/a	bovine	WRLFMD	Botswana	III
BOT/6/2012	n/a	bovine	WRLFMD	Botswana	III
BOT/6/2012	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/5/2012	n/a	bovine	WRLFMD	Botswana	III
BOT/7/2012	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/19/2012	n/a	bovine	WRLFMD	Botswana	III
BOT/20/2012	n/a	bovine	WRLFMD	Botswana	III
BOT/1/2013	n/a	bovine	WRLFMD	Botswana	III
BOT/2/2013	n/a	bovine	WRLFMD	Botswana	III
BOT/P3/98 NXA-7*	n/a	african buffalo	WRLFMD	Botswana	III
BOT/P3/98 NXA-16*	n/a	african buffalo	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/3/2009	n/a	cattle	WRLFMD	Botswana	III
BOT/4/2009	n/a	cattle	WRLFMD	Botswana	III
BOT/2/2009	n/a	cattle	WRLFMD	Botswana	III
BOT/16/2008	n/a	cattle	WRLFMD	Botswana	III
BOT/18/2008	n/a	cattle	WRLFMD	Botswana	III
BOT/7/2008	n/a	cattle	WRLFMD	Botswana	III
BOT/11/2008	n/a	cattle	WRLFMD	Botswana	III
BOT/2/2007	n/a	cattle	WRLFMD	Botswana	III
BOT/5/2007	n/a	cattle	WRLFMD	Botswana	III
BOT/3/2007	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/6/2008	n/a	cattle	WRLFMD	Botswana	III
BOT/8/2008	n/a	cattle	WRLFMD	Botswana	III
BOT/10/2008	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/10/2012	n/a	bovine	WRLFMD	Botswana	III
BOT/12/2012	n/a	bovine	WRLFMD	Botswana	III
BOT/17/2012	n/a	bovine	WRLFMD	Botswana	III
BOT/8/2012	n/a	bovine	WRLFMD	Botswana	III
BOT12/12*	n/a	n/a	BVI	Botswana	III
BOT/16/2012	n/a	bovine	WRLFMD	Botswana	III
BOT/11/2012	n/a	bovine	WRLFMD	Botswana	III
BOT/15/2012	n/a	bovine	WRLFMD	Botswana	III
BOT/13/2012	n/a	bovine	WRLFMD	Botswana	III
BOT14/12*	n/a	n/a	BVI	Botswana	III
BOT/18/2012	n/a	bovine	WRLFMD	Botswana	III
BOT/14/2012	n/a	bovine	WRLFMD	Botswana	III
BOT/1/2010	n/a	cattle	WRLFMD	Botswana	III
BOT/6/2005	n/a	cattle	WRLFMD	Botswana	III
BOT/8/2005	n/a	cattle	WRLFMD	Botswana	III
BOT/1/2005	n/a	cattle	WRLFMD	Botswana	III
BOT/3/2005	n/a	cattle	WRLFMD	Botswana	III
BOT/5/2005	n/a	cattle	WRLFMD	Botswana	III

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label	accession	host(s)	lab	country	taxonomic information
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/24/2006	n/a	african buffalo	WRLFMD	Botswana	III
BOT/P3/2000 SAV-24*	n/a	african buffalo	WRLFMD	Botswana	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*	n/a	african buffalo	WRLFMD	Botswana	III
BOT/P3/98 VUM-29*	AF367124	african buffalo	OVI	Botswana	III
BOT/3/77	KF112928	cattle	OVI	Botswana	III
BOT/1/80	KF112929	cattle	WRLFMD	Botswana	III
RHO/1/48	AY593847	n/a	PIADC	Rhodesia	III
KEN/1/84	AY344505	bovine	OVI	Kenya	IV
ETH/1/90	AY343935	bovine	OVI	Ethiopia	IV
MAL/1/2003	n/a	bovine	WRLFMD	Malawi	I
SA/106/59	AY593848	n/a	PIADC	South Africa (SA)	I
ZIM/14/2002	KF219689	bovine	WRLFMD	Zimbabwe	I
ZIM/7/83*	AF136607	bovine	OVI	Zimbabwe	II
ZIM/5/81	EF134951	bovine	WRLFMD	Zimbabwe	II
NIG/2/75	AF367139	bovine	OVI	Nigeria	V
GHA/2/90	AF479415	bovine	OVI	Ghana	V
ANG/4/74	AF479417	n/a	OVI	Angola	XI
CAR/8/2005	JX570616	cattle	WRLFMD	Cameroon	VII
SAU/6/2000	AF367135	bovine	OVI	Saudi Arabia	VII
RWA/1/2000*	AF367134	n/a	OVI	Rwanda	VIII
ZAI/1/74	DQ009737	n/a	OVI	Zaire	VIII
KEN/3/57	AJ251473	n/a	WRLFMD	Kenya	IX
KEN/2/84	AY343941	bovine	OVI	Kenya	IX
UGA/51/75	AY343963	bovine	OVI	Uganda	XII
ZAI/1/82	AF367100	bovine	OVI	Zaire	X
UGA/19/98	AY343969	n/a	OVI	Uganda	X
ETH/2/91	AY343938	bovine	OVI	Ethiopia	XIV
SUD/6/77	AY343939	n/a	OVI	Sudan	XIII
ETH/2/2007	FJ798161	cattle	WRLFMD	Ethiopia	XIII
GAM/8/79	AF479410	bovine	OVI	Gambia	VI

*, not a WRLFMD Reference Number

n/a, not available