

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

## Genotyping Report

FMDV serotype: SAT3  
Country: Zambia  
Year: 2017  
Batch: WRLFMD/2017/00028  
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:	ZAM/1/2017
Sender reference:	ZAM08/17
Location of origin:	Lusaka, Lukulo
Country of origin:	Zambia
Date of collection:	18/05/2017
Host species:	cattle
Serotype:	SAT3
Topotype:	II
Lineage:	
Sublineage:	
Sequence length:	648
Ambiguities:	0
Material submitted for sequencing:	BTy1
Harvest date of material:	24/10/2017
Primers:	SAT3-1C559F/SAT-2B208R; SAT3-P1-1222F/SAT-2B208R
Received for sequencing:	30/10/2017
Created:	06/11/2017
Last updated:	06/11/2017
VIBASys IDs: sample 35220, genome 35221, sequence viba_35222, sequencing info 35223	

### Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_33808	ZAM/07/2017	bovine	99.8	0	SAT3	II		
viba_26787	ZAM09/2015	cattle	98.0	0	SAT3	II		
viba_27754	ZAM/3/2015	bovine	98.0	0	SAT3	II		
viba_26783	ZAM08/2015	cattle	98.0	0	SAT3	II		
viba_26608	BOT/P3/98 VUM-21	african buffalo	89.2	0	SAT3	II		
viba_26604	BOT/P3/98 NXA-9	african buffalo	88.9	0	SAT3	II		
viba_26596	BOT/P3/98 NXA-6	african buffalo	88.1	2	SAT3	II		
viba_30850	NMB/1/94	cattle	86.0	0	SAT3	II		
viba_26616	BOT/P3/2000 SAV-21	african buffalo	85.7	0	SAT3	II		
viba_26863	ZIM/2/84	cattle	85.6	0	SAT3	II		

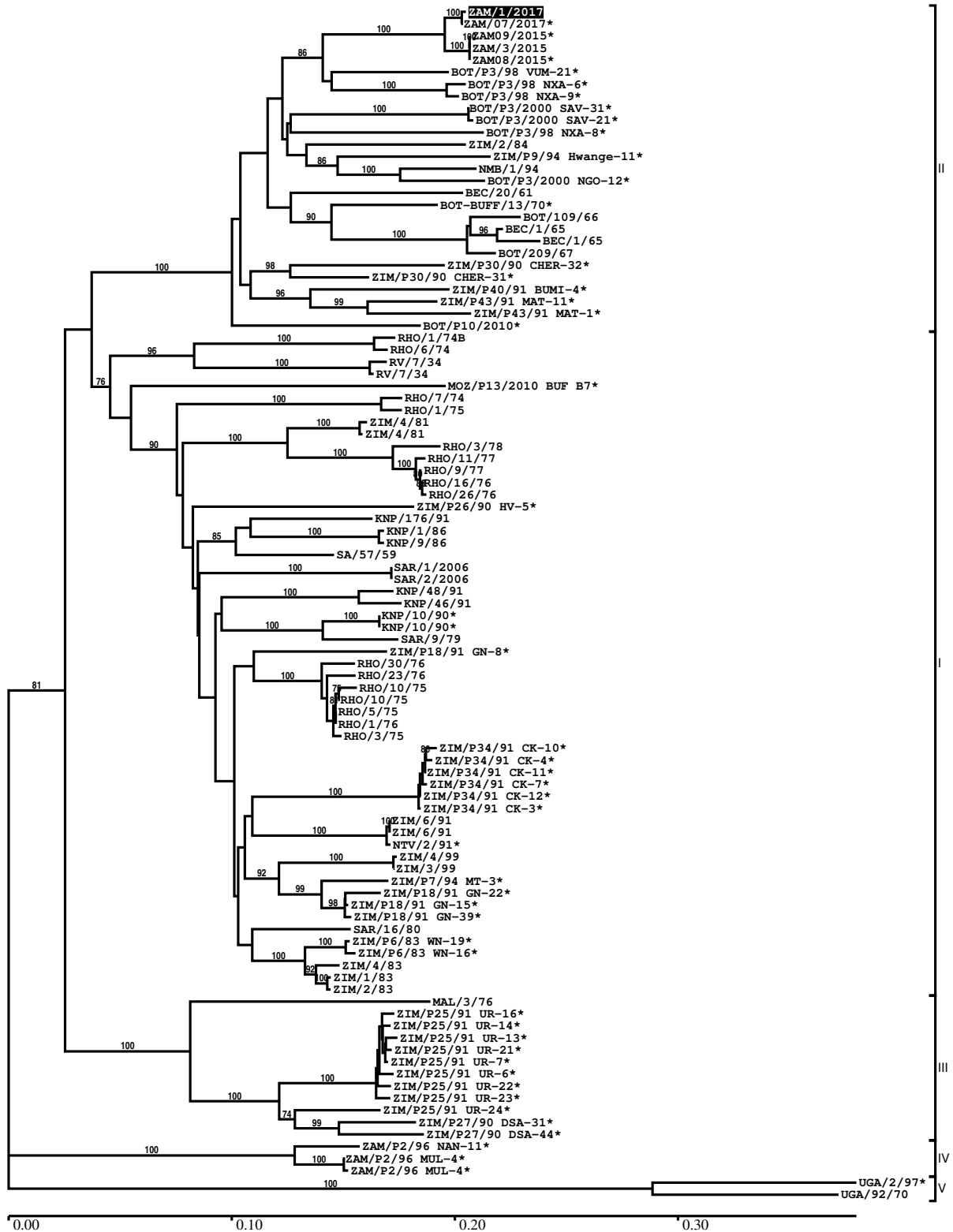
### Most Closely Related Prototype Sequences

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_599	BEC/20/61		84.9	0	SAT3	II		
viba_770	BEC/1/65		84.3	0	SAT3	II		
viba_227	KNP/10/90	african buffalo	77.7	0	SAT3	I		
viba_26691	RV/7/34	cattle	77.3	0	SAT3	I		
viba_572	SA/57/59		75.9	0	SAT3	I		
viba_748	ZAM/P2/96 MUL-4	african buffalo	75.6	0	SAT3	IV		
viba_364	ZIM/P25/91 UR-7	african buffalo	74.9	0	SAT3	III		
viba_26659	MOZ/P13/2010 BUF B7	african buffalo	73.6	0	SAT3	I		
viba_56	UGA/2/97	african buffalo	66.0	0	SAT3	V		
viba_156	UGA/92/70	african buffalo	63.6	0	SAT3	V		

Report on FMDV SAT3 in Zambia in 2017

Batch: WRLFMD/2017/00028



\*, not a WRLFMD Reference Number

## Analysis Parameters

VP1 subsequence extractor: vp1\_SAT3  
 Query sequence set: WRLFMD/2017/00028-Zambia-SAT3 (1 sequences)  
 Sequence database set: allseqs\_SAT3 (151 sequences)  
 Prototype sequence set: !prototypes\_SAT3 (10 sequences)  
 Number of related sequences reported: 10  
 Minimal VP1 subsequence match length: 600  
 Sequence alignment method: muscle (default parameters)  
 Sequence alignment length: 648  
 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/SAT3

label	accession	host(s)	lab	country	taxonomic information
ZAM/1/2017	n/a	cattle	WRLFMD	Zambia	II
ZAM/07/2017*	n/a	bovine	BVI	Zambia	II
ZAM09/2015*	n/a	cattle	BVI	Zambia	II
ZAM/3/2015	n/a	bovine	WRLFMD	Zambia	II
ZAM08/2015*	n/a	cattle	BVI	Zambia	II
BOT/P3/98 VUM-21*	n/a	african buffalo	WRLFMD	Botswana	II
BOT/P3/98 NXA-6*	n/a	african buffalo	WRLFMD	Botswana	II
BOT/P3/98 NXA-9*	n/a	african buffalo	WRLFMD	Botswana	II
BOT/P3/2000 SAV-31*	n/a	african buffalo	WRLFMD	Botswana	II
BOT/P3/2000 SAV-21*	n/a	african buffalo	WRLFMD	Botswana	II
BOT/P3/98 NXA-8*	n/a	african buffalo	WRLFMD	Botswana	II
ZIM/2/84	n/a	cattle	WRLFMD	Zimbabwe	II
ZIM/P9/94 Hwange-11*	n/a	african buffalo	WRLFMD	Zimbabwe	II
NMB/1/94	n/a	cattle	WRLFMD	Namibia	II
BOT/P3/2000 NGO-12*	n/a	african buffalo	WRLFMD	Botswana	II
BEC/20/61	AY593851	n/a	PIADC	Bechuanaland	II
BOT-BUFF/13/70*	n/a	african buffalo	WRLFMD	Botswana	II
BOT/109/66	n/a	cattle	WRLFMD	Botswana	II
BEC/1/65	AY593853	n/a	PIADC	Bechuanaland	II
BEC/1/65	M28719	n/a	WELLCOME	Bechuanaland	II
BOT/209/67	n/a	cattle	WRLFMD	Botswana	II
ZIM/P30/90 CHER-32*	n/a	african buffalo	WRLFMD	Zimbabwe	II
ZIM/P30/90 CHER-31*	n/a	african buffalo	WRLFMD	Zimbabwe	II
ZIM/P40/91 BUMI-4*	n/a	african buffalo	WRLFMD	Zimbabwe	II
ZIM/P43/91 MAT-11*	n/a	african buffalo	WRLFMD	Zimbabwe	II
ZIM/P43/91 MAT-1*	n/a	african buffalo	WRLFMD	Zimbabwe	II
BOT/P10/2010*	n/a	african buffalo	WRLFMD	Botswana	II
RHO/1/74B	n/a	cattle	WRLFMD	Rhodesia	I
RHO/6/74	n/a	n/a	WRLFMD	Rhodesia	I
RV/7/34	n/a	cattle	WRLFMD	Rhodesia	I
RV/7/34	n/a	cattle	WRLFMD	Rhodesia	I
MOZ/P13/2010 BUF B7*	KF219693	african buffalo	WRLFMD	Mozambique	I
RHO/7/74	n/a	n/a	WRLFMD	Rhodesia	I
RHO/1/75	n/a	cattle	WRLFMD	Rhodesia	I
ZIM/4/81	KX375417	cattle	APQA, ROK	Zimbabwe	I
ZIM/4/81	n/a	cattle	WRLFMD	Zimbabwe	I

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label	accession	host(s)	lab	country	taxonomic information
RHO/3/78	n/a	cattle	WRLFMD	Rhodesia	I
RHO/11/77	n/a	cattle	WRLFMD	Rhodesia	I
RHO/9/77	n/a	n/a	WRLFMD	Rhodesia	I
RHO/16/76	n/a	cattle	WRLFMD	Rhodesia	I
RHO/26/76	n/a	cattle	WRLFMD	Rhodesia	I
ZIM/P26/90 HV-5*	n/a	african buffalo	WRLFMD	Zimbabwe	I
KNP/176/91	n/a	african buffalo	WRLFMD	South Africa	I
KNP/1/86	n/a	african buffalo	WRLFMD	(KNP) South Africa	I
KNP/9/86	n/a	african buffalo	WRLFMD	(KNP) South Africa	I
SA/57/59	AY593850	n/a	PIADC	(KNP) South Africa	I
SAR/1/2006	n/a	cattle	WRLFMD	(SA) Republic of	I
SAR/2/2006	n/a	cattle	WRLFMD	South Africa	I
KNP/48/91	n/a	african buffalo	WRLFMD	Republic of	I
KNP/46/91	n/a	african buffalo	WRLFMD	South Africa	I
KNP/10/90*	n/a	african buffalo	WRLFMD	(KNP) South Africa	I
KNP/10/90*	n/a	african buffalo	WRLFMD	(KNP) South Africa	I
SAR/9/79	n/a	cattle	WRLFMD	(KNP) Republic of	I
ZIM/P18/91 GN-8*	n/a	african buffalo	WRLFMD	South Africa	I
RHO/30/76	n/a	n/a	WRLFMD	Zimbabwe	I
RHO/23/76	n/a	cattle	WRLFMD	Rhodesia	I
RHO/10/75	n/a	greater kudu	WRLFMD	Rhodesia	I
RHO/10/75	n/a	greater kudu	WRLFMD	Rhodesia	I
RHO/5/75	n/a	cattle	WRLFMD	Rhodesia	I
RHO/1/76	n/a	cattle	WRLFMD	Rhodesia	I
RHO/3/75	n/a	cattle	WRLFMD	Rhodesia	I
ZIM/P34/91 CK-10*	n/a	african buffalo	WRLFMD	Zimbabwe	I
ZIM/P34/91 CK-4*	n/a	african buffalo	WRLFMD	Zimbabwe	I
ZIM/P34/91 CK-11*	n/a	african buffalo	WRLFMD	Zimbabwe	I
ZIM/P34/91 CK-7*	n/a	african buffalo	WRLFMD	Zimbabwe	I
ZIM/P34/91 CK-12*	n/a	african buffalo	WRLFMD	Zimbabwe	I
ZIM/P34/91 CK-3*	n/a	african buffalo	WRLFMD	Zimbabwe	I
ZIM/6/91	n/a	cattle	WRLFMD	Zimbabwe	I
ZIM/6/91	KM268901	cattle	WRLFMD	Zimbabwe	I
NTV/2/91*	n/a	african buffalo	WRLFMD	South Africa	I
ZIM/4/99	n/a	cattle	WRLFMD	(NTV) Zimbabwe	I
ZIM/3/99	n/a	cattle	WRLFMD	Zimbabwe	I
ZIM/P7/94 MT-3*	n/a	african buffalo	WRLFMD	Zimbabwe	I
ZIM/P18/91 GN-22*	n/a	african buffalo	WRLFMD	Zimbabwe	I
ZIM/P18/91 GN-15*	n/a	african buffalo	WRLFMD	Zimbabwe	I
ZIM/P18/91 GN-39*	n/a	african buffalo	WRLFMD	Zimbabwe	I
SAR/16/80	n/a	african buffalo	WRLFMD	Republic of	I
ZIM/P6/83 WN-19*	n/a	african buffalo	WRLFMD	South Africa	I
ZIM/P6/83 WN-16*	n/a	african buffalo	WRLFMD	Zimbabwe	I
ZIM/4/83	n/a	n/a	WRLFMD	Zimbabwe	I
ZIM/1/83	n/a	n/a	WRLFMD	Zimbabwe	I
ZIM/2/83	n/a	cattle	WRLFMD	Zimbabwe	I
MAL/3/76	n/a	cattle	WRLFMD	Zimbabwe	I
ZIM/P25/91 UR-16*	n/a	african buffalo	WRLFMD	Malawi	III
ZIM/P25/91 UR-14*	n/a	african buffalo	WRLFMD	Zimbabwe	III
ZIM/P25/91 UR-13*	n/a	african buffalo	WRLFMD	Zimbabwe	III
ZIM/P25/91 UR-21*	n/a	african buffalo	WRLFMD	Zimbabwe	III
ZIM/P25/91 UR-7*	KY091306	african buffalo	WRLFMD	Zimbabwe	III
ZIM/P25/91 UR-6*	n/a	african buffalo	WRLFMD	Zimbabwe	III
ZIM/P25/91 UR-22*	n/a	african buffalo	WRLFMD	Zimbabwe	III
ZIM/P25/91 UR-23*	n/a	african buffalo	WRLFMD	Zimbabwe	III

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label	accession	host(s)	lab	country	taxonomic information
ZIM/P25/91 UR-24*	n/a	african buffalo	WRLFMD	Zimbabwe	III
ZIM/P27/90 DSA-31*	n/a	african buffalo	WRLFMD	Zimbabwe	III
ZIM/P27/90 DSA-44*	n/a	african buffalo	WRLFMD	Zimbabwe	III
ZAM/P2/96 NAN-11*	n/a	african buffalo	WRLFMD	Zambia	IV
ZAM/P2/96 MUL-4*	KY091307	african buffalo	WRLFMD	Zambia	IV
ZAM/P2/96 MUL-4*	DQ009741	african buffalo	OVI	Zambia	IV
UGA/2/97*	DQ009742	african buffalo	OVI	Uganda	V
UGA/92/70	KF219685	african buffalo	WRLFMD	Uganda	V

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n/a, not available