

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

Genotyping Report

FMDV serotype: A
Country: Zambia
Year: 2015
Batch: WRLFMD/2016/00022
No. of sequences: 1
Report date: 12th July 2016
Report generated by: Nick Knowles
Report checked by: Kasia Bankowska

Analysis Parameters

VP1 subsequence extractor: vp1_A
Query sequence set: WRLFMD/2016/00022-Zambia-A (1 sequences)
Sequence database set: allseqs_A (1362 sequences)
Prototype sequence set: prototypes_A (34 sequences)
Number of related sequences reported: 10
Minimal VP1 subsequence match length: 600
VIBASys version: reflabs-1.0.2



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

email: reporting@pirbright.ac.uk

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Virus sample name:	ZAM/1/2015
Sender reference:	ZAM 01/15
Location of origin:	Mupata village, Mpulungu district, Northern province
Country of origin:	Zambia
Date of collection:	04/02/2015
Host species:	bovine
Serotype:	A
Topotype:	AFRICA
Lineage:	G-I
Sublineage:	
Sequence length:	633
Ambiguities:	0
Material submitted for sequencing:	BTy2
Harvest date of material:	28/06/2016
Primers:	A-1C562F/EUR-2B52R; A-1C612F/EUR-2B52R
Received for sequencing:	07/07/2016
Created:	11/07/2016
Last updated:	11/07/2016
VIBASys IDs: sample 27735, genome 27736, sequence viba_27737, sequencing info 27738	

Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_11314	K73/08	cattle	95.9	0	A	AFRICA	G-I	
viba_10489	KEN/28/2008	cattle	95.9	0	A	AFRICA	G-I	
viba_19440	TAN/65/2012	cattle	95.7	0	A	AFRICA	G-I	
viba_21245	TAN/1/2013	cattle	95.7	0	A	AFRICA	G-I	
viba_12066	TAN/42/2009	cattle	95.7	0	A	AFRICA	G-I	
viba_19436	TAN/61/2012	cattle	95.7	0	A	AFRICA	G-I	
viba_19444	TAN/66/2012	cattle	95.7	0	A	AFRICA	G-I	
viba_19428	TAN/56/2012	cattle	95.7	0	A	AFRICA	G-I	
viba_12074	TAN/47/2009	cattle	95.6	0	A	AFRICA	G-I	
viba_19432	TAN/60/2012	cattle	95.6	0	A	AFRICA	G-I	

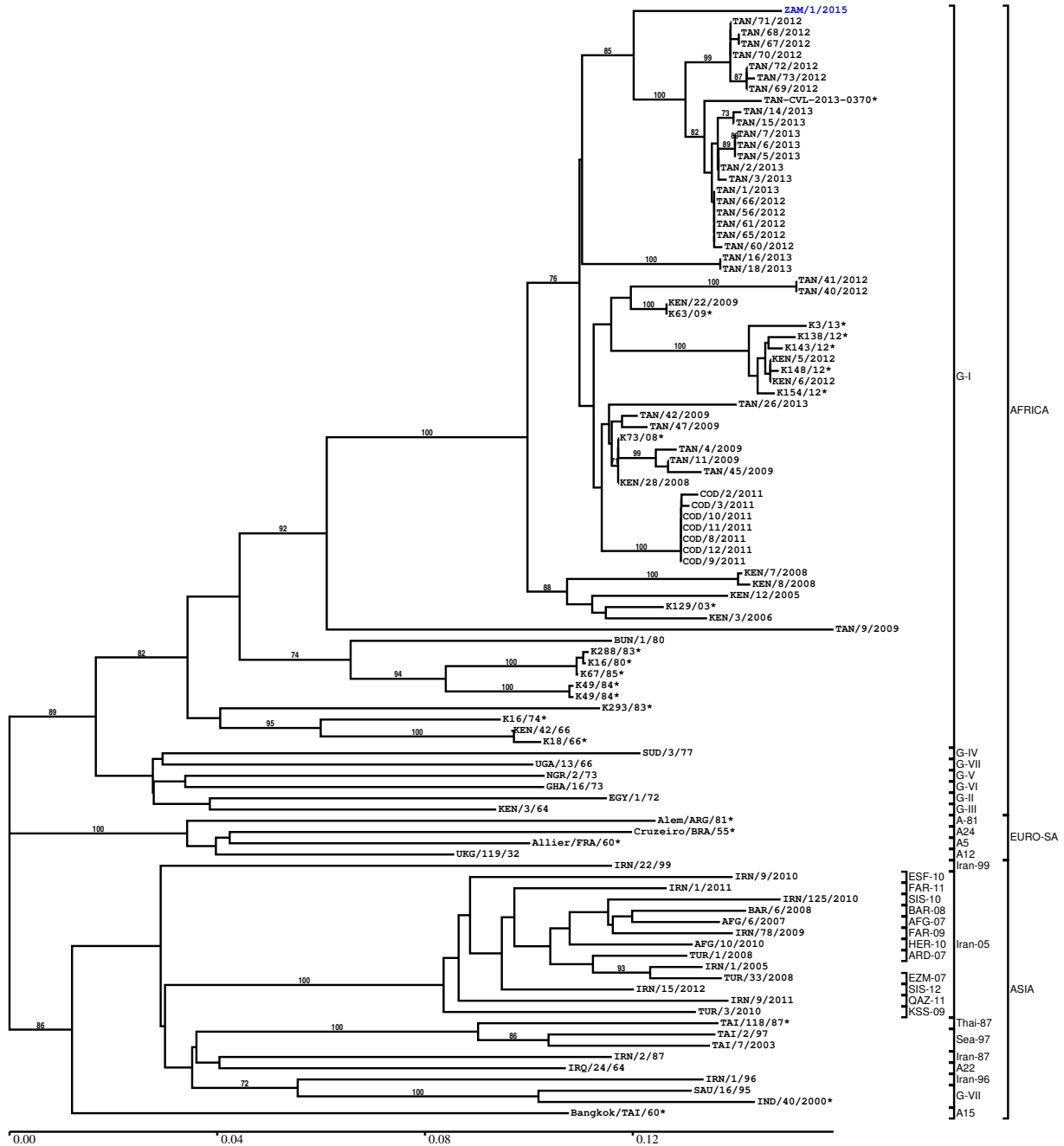
Most Closely Related Prototype Sequences

see http://www.wrlfmd.org/fmd_genotyping/prototypes.htm

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_347	KEN/42/66		86.0	0	A	AFRICA	G-I	
viba_785	KEN/3/64		82.5	0	A	AFRICA	G-III	
viba_173	UGA/13/66	bovine	82.2	0	A	AFRICA	G-VII	
viba_699	UKG/119/32		81.9	0	A	EURO-SA	A12	
viba_688	EGY/1/72	bovine	81.5	0	A	AFRICA	G-II	
viba_178	SUD/3/77		80.4	0	A	AFRICA	G-IV	
viba_609	GHA/16/73	bovine	80.3	0	A	AFRICA	G-VI	
viba_535	NGR/2/73	bovine	80.1	0	A	AFRICA	G-V	
viba_780	IRN/9/2010	cattle	78.5	0	A	ASIA	Iran-05	ESF-10
viba_435	Allier/FRA/60		78.4	0	A	EURO-SA	A5	

Report on FMDV A in Zambia in 2015

Batch: WRLFMD/2016/00022



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/A

label	accession	host(s)	lab	country	taxonomic information
ZAM/1/2015	n/a	bovine	WRLFMD	Zambia	AFRICA/G-I
TAN/71/2012	n/a	cattle	WRLFMD	Tanzania	AFRICA/G-I
TAN/68/2012	n/a	cattle	WRLFMD	Tanzania	AFRICA/G-I
TAN/67/2012	n/a	cattle	WRLFMD	Tanzania	AFRICA/G-I
TAN/70/2012	n/a	cattle	WRLFMD	Tanzania	AFRICA/G-I
TAN/72/2012	n/a	cattle	WRLFMD	Tanzania	AFRICA/G-I
TAN/73/2012	n/a	cattle	WRLFMD	Tanzania	AFRICA/G-I
TAN/69/2012	n/a	cattle	WRLFMD	Tanzania	AFRICA/G-I
TAN-CVL-2013-0370*	n/a	cattle	CVL-Tanzania	Tanzania	AFRICA/G-I
TAN/14/2013	n/a	cattle	WRLFMD	Tanzania	AFRICA/G-I
TAN/15/2013	n/a	cattle	WRLFMD	Tanzania	AFRICA/G-I
TAN/7/2013	n/a	cattle	WRLFMD	Tanzania	AFRICA/G-I
TAN/6/2013	n/a	cattle	WRLFMD	Tanzania	AFRICA/G-I
TAN/5/2013	n/a	cattle	WRLFMD	Tanzania	AFRICA/G-I
TAN/2/2013	n/a	cattle	WRLFMD	Tanzania	AFRICA/G-I
TAN/3/2013	n/a	cattle	WRLFMD	Tanzania	AFRICA/G-I
TAN/1/2013	n/a	cattle	WRLFMD	Tanzania	AFRICA/G-I
TAN/66/2012	n/a	cattle	WRLFMD	Tanzania	AFRICA/G-I
TAN/56/2012	n/a	cattle	WRLFMD	Tanzania	AFRICA/G-I
TAN/61/2012	n/a	cattle	WRLFMD	Tanzania	AFRICA/G-I
TAN/65/2012	n/a	cattle	WRLFMD	Tanzania	AFRICA/G-I
TAN/60/2012	n/a	cattle	WRLFMD	Tanzania	AFRICA/G-I
TAN/16/2013	n/a	cattle	WRLFMD	Tanzania	AFRICA/G-I
TAN/18/2013	n/a	cattle	WRLFMD	Tanzania	AFRICA/G-I
TAN/41/2012	n/a	cattle	WRLFMD	Tanzania	AFRICA/G-I
TAN/40/2012	n/a	cattle	WRLFMD	Tanzania	AFRICA/G-I
KEN/22/2009	KF561703	cattle	WRLFMD	Kenya	AFRICA/G-I
K63/09*	KJ440871	cattle	Embakasi/Lindholm	Kenya	AFRICA/G-I
K3/13*	KJ440876	cattle	Embakasi/Lindholm	Kenya	AFRICA/G-I
K138/12*	KJ440872	cattle	Embakasi/Lindholm	Kenya	AFRICA/G-I
K143/12*	KJ440873	cattle	Embakasi/Lindholm	Kenya	AFRICA/G-I
KEN/5/2012	n/a	bovine	WRLFMD	Kenya	AFRICA/G-I
K148/12*	KJ440874	cattle	Embakasi/Lindholm	Kenya	AFRICA/G-I
KEN/6/2012	n/a	bovine	WRLFMD	Kenya	AFRICA/G-I
K154/12*	KJ440875	cattle	Embakasi/Lindholm	Kenya	AFRICA/G-I
TAN/26/2013	n/a	cattle	WRLFMD	Tanzania	AFRICA/G-I
TAN/42/2009	KF561695	cattle	WRLFMD	Tanzania	AFRICA/G-I
TAN/47/2009	KF561697	cattle	WRLFMD	Tanzania	AFRICA/G-I
K73/08*	KJ440870	cattle	Embakasi/Lindholm	Kenya	AFRICA/G-I
TAN/4/2009	KF561692	cattle	WRLFMD	Tanzania	AFRICA/G-I
TAN/11/2009	KF561694	cattle	WRLFMD	Tanzania	AFRICA/G-I
TAN/45/2009	KF561696	cattle	WRLFMD	Tanzania	AFRICA/G-I
KEN/28/2008	KF561702	cattle	WRLFMD	Kenya	AFRICA/G-I
COD/2/2011	n/a	cattle	WRLFMD	Democratic Republic of the Congo	AFRICA/G-I
COD/3/2011	n/a	cattle	WRLFMD	Democratic Republic of the Congo	AFRICA/G-I
COD/10/2011	n/a	cattle	WRLFMD	Democratic Republic of the Congo	AFRICA/G-I
COD/11/2011	n/a	cattle	WRLFMD	Democratic Republic of the Congo	AFRICA/G-I
COD/8/2011	n/a	cattle	WRLFMD	Democratic Republic of the Congo	AFRICA/G-I
COD/12/2011	n/a	cattle	WRLFMD	Democratic Republic of the Congo	AFRICA/G-I

continued on next page

label	accession	host(s)	lab	country	taxonomic information
COD/9/2011	n/a	cattle	WRLFMD	Democratic Republic of the Congo	AFRICA/G-I
KEN/7/2008	KF561700	cattle	WRLFMD	Kenya	AFRICA/G-I
KEN/8/2008	KF561701	cattle	WRLFMD	Kenya	AFRICA/G-I
KEN/12/2005	n/a	cattle	WRLFMD	Kenya	AFRICA/G-I
K129/03*	KJ440868	cattle	Embakasi/Lindholm	Kenya	AFRICA/G-I
KEN/3/2006	n/a	cattle	WRLFMD	Kenya	AFRICA/G-I
TAN/9/2009	KF561693	cattle	WRLFMD	Tanzania	AFRICA/G-I
BUN/1/80	n/a	n/a	WRLFMD	Burundi	AFRICA/G-I
K288/83*	KJ440854	cattle	Embakasi/Lindholm	Kenya	AFRICA/G-I
K16/80*	KJ440847	cattle	Embakasi/Lindholm	Kenya	AFRICA/G-I
K67/85*	KJ440858	cattle	Embakasi/Lindholm	Kenya	AFRICA/G-I
K49/84*	n/a	cattle	WRLFMD	Kenya	AFRICA/G-I
K49/84*	KJ440857	cattle	Embakasi/Lindholm	Kenya	AFRICA/G-I
K293/83*	KJ440855	cattle	Embakasi/Lindholm	Kenya	AFRICA/G-I
K16/74*	n/a	n/a	WRLFMD	Kenya	AFRICA/G-I
KEN/42/66	KF561699	n/a	WRLFMD	Kenya	AFRICA/G-I
K18/66*	KJ440839	cattle	Embakasi/Lindholm	Kenya	AFRICA/G-I
SUD/3/77	GU566064	n/a	WRLFMD	Sudan	AFRICA/G-IV
UGA/13/66	KF561705	bovine	WRLFMD	Uganda	AFRICA/G-VII
NGR/2/73	KF561704	bovine	WRLFMD	Niger	AFRICA/G-V
GHA/16/73	KF561698	bovine	WRLFMD	Ghana	AFRICA/G-VI
EGY/1/72	EF208756	bovine	WRLFMD	Egypt	AFRICA/G-II
KEN/3/64	AY593761	n/a	PIADC	Kenya	AFRICA/G-III
Alem/ARG/81*	AJ306219	n/a	INTA-Argentina	Argentina	EURO-SA/A-81
Cruzeiro/BRA/55*	AY593768	bovine	PIADC	Brazil	EURO-SA/A24
Allier/FRA/60*	AY593780	n/a	PIADC	France	EURO-SA/A5
UKG/119/32	M10975	n/a	PIADC	United Kingdom	EURO-SA/A12
IRN/22/99	EF208772	n/a	WRLFMD	Iran	ASIA/Iran-99
IRN/9/2010	n/a	cattle	WRLFMD	Iran	ASIA/Iran-05/ESF-10
IRN/1/2011	n/a	bovine	WRLFMD	Iran	ASIA/Iran-05/FAR-11
IRN/125/2010	n/a	bovine	WRLFMD	Iran	ASIA/Iran-05/SIS-10
BAR/6/2008	FJ755010	bovine	WRLFMD	Bahrain	ASIA/Iran-05/BAR-08
AFG/6/2007	FJ755007	bovine	WRLFMD	Afghanistan	ASIA/Iran-05/AFG-07
IRN/78/2009	n/a	n/a	WRLFMD	Iran	ASIA/Iran-05/FAR-09
AFG/10/2010	n/a	n/a	WRLFMD	Afghanistan	ASIA/Iran-05/HER-10
TUR/1/2008	FJ755133	cattle	WRLFMD	Turkey	ASIA/Iran-05/ARD-07
IRN/1/2005	EF208769	cattle	WRLFMD	Iran	ASIA/Iran-05
TUR/33/2008	FJ755155	cattle	WRLFMD	Turkey	ASIA/Iran-05/EZM-07
IRN/15/2012	n/a	bovine	WRLFMD	Iran	ASIA/Iran-05/SIS-12
IRN/9/2011	n/a	bovine	WRLFMD	Iran	ASIA/Iran-05/QAZ-11
TUR/3/2010	n/a	cattle	WRLFMD	Turkey	ASIA/Iran-05/KSS-09
TAI/118/87*	EF208777	n/a	WRLFMD	Thailand	ASIA/Thai-87
TAI/2/97	EF208778	n/a	WRLFMD	Thailand	ASIA/Sea-97
TAI/7/2003	HQ116312	bovine	WRLFMD	Thailand	ASIA/Sea-97
IRN/2/87	EF208770	bovine	WRLFMD	Iran	ASIA/Iran-87
IRQ/24/64	AY593763	bovine	PIADC	Iraq	ASIA/A22
IRN/1/96	EF208771	bovine	WRLFMD	Iran	ASIA/Iran-96
SAU/16/95	EU553874	n/a	WRLFMD	Saudi Arabia	ASIA/G-VII
IND/40/2000*	AF390646	cattle	PD-FMD	India	ASIA/G-VII
Bangkok/TAI/60*	AY593755	n/a	PIADC	Thailand	ASIA/A15

*, not a WRLFMD Reference Number

n/a, not available