

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

Genotyping Report

FMDV serotype: O
Country: Laos
Year: 2017
Batch: WRLFMD/2017/00013
No. of sequences: 2
Report date: 29th June 2017
Report generated by: Nick Knowles
Report checked by: Kasia Bankowska



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

email: reporting@pirbright.ac.uk

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Virus sample name:	LAO/1/2017
Sender reference:	LAO1/17R3
Location of origin:	Vangpho, Parknguem, Vientiane City
Country of origin:	Laos
Date of collection:	30/01/2017
Host species:	cattle
Serotype:	O
Topotype:	SEA
Lineage:	Mya-98
Sublineage:	
Sequence length:	633
Ambiguities:	0
Material submitted for sequencing:	BTy1
Harvest date of material:	14/06/2017
Primers:	O-1C244F/EUR-2B52R; O-1C272F/EUR-2B52R
Received for sequencing:	22/06/2017
Created:	29/06/2017
Last updated:	29/06/2017
VIBASys IDs: sample 33919, genome 33920, sequence viba_33921, sequencing info 33922	

Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_32416	LAO/5/2017		100.0	0	O	SEA	Mya-98	
viba_33925	LAO/2/2017	cattle	100.0	0	O	SEA	Mya-98	
viba_33977	TAI/50/2016	cattle	99.5	0	O	SEA	Mya-98	
viba_30514	TAI/33/2016	porcine	99.5	0	O	SEA	Mya-98	
viba_33937	TAI/40/2016	cattle	99.5	0	O	SEA	Mya-98	
viba_33933	TAI/39/2016	cattle	99.5	0	O	SEA	Mya-98	
viba_30522	TAI/35/2016	cattle	99.5	0	O	SEA	Mya-98	
viba_33965	TAI/47/2016	cattle	99.4	0	O	SEA	Mya-98	
viba_33981	TAI/51/2016	cattle	99.4	0	O	SEA	Mya-98	
viba_33929	TAI/38/2016	cattle	99.4	0	O	SEA	Mya-98	

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_199	MYA/7/98	bovine	91.3	0	O	SEA	Mya-98	
viba_68	TAI/189/87	bovine	88.2	0	O	SEA		
viba_491	TUR/257/2008		84.2	0	O	ME-SA	PanAsia-2	TER-08
viba_766	IRN/31/2009	cattle	84.1	0	O	ME-SA	PanAsia-2	FAR-09
viba_650	IRN/8/2005	ovine	83.9	0	O	ME-SA	PanAsia-2	
viba_354	PAK/16/2010	cattle	83.9	0	O	ME-SA	PanAsia-2	PUN-10
viba_505	TUR/264/2009		83.8	0	O	ME-SA	PanAsia-2	SAN-09
viba_860	IRN/6/2015	cattle	83.8	0	O	ME-SA	PanAsia-2	QOM-15
viba_719	IRN/88/2009		83.6	0	O	ME-SA	PanAsia-2	ANT-10
viba_666	IRN/18/2010	cattle	83.5	0	O	ME-SA	PanAsia-2	BAL-09

Virus sample name:	LAO/2/2017
Sender reference:	LAO5/17R3
Location of origin:	Hieng, Sukkuma, Champasak
Country of origin:	Laos
Date of collection:	30/01/2017
Host species:	cattle
Serotype:	O
Topotype:	SEA
Lineage:	Mya-98
Sublineage:	
Sequence length:	633
Ambiguities:	0
Material submitted for sequencing:	BTy1
Harvest date of material:	14/06/2017
Primers:	O-1C244F/EUR-2B52R; O-1C272F/EUR-2B52R
Received for sequencing:	22/06/2017
Created:	29/06/2017
Last updated:	29/06/2017
VIBASys IDs: sample 33923, genome 33924, sequence viba_33925, sequencing info 33926	

Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_32416	LAO/5/2017		100.0	0	O	SEA	Mya-98	
viba_33921	LAO/1/2017	cattle	100.0	0	O	SEA	Mya-98	
viba_33977	TAI/50/2016	cattle	99.5	0	O	SEA	Mya-98	
viba_30514	TAI/33/2016	porcine	99.5	0	O	SEA	Mya-98	
viba_33937	TAI/40/2016	cattle	99.5	0	O	SEA	Mya-98	
viba_33933	TAI/39/2016	cattle	99.5	0	O	SEA	Mya-98	
viba_30522	TAI/35/2016	cattle	99.5	0	O	SEA	Mya-98	
viba_33965	TAI/47/2016	cattle	99.4	0	O	SEA	Mya-98	
viba_33981	TAI/51/2016	cattle	99.4	0	O	SEA	Mya-98	
viba_33929	TAI/38/2016	cattle	99.4	0	O	SEA	Mya-98	

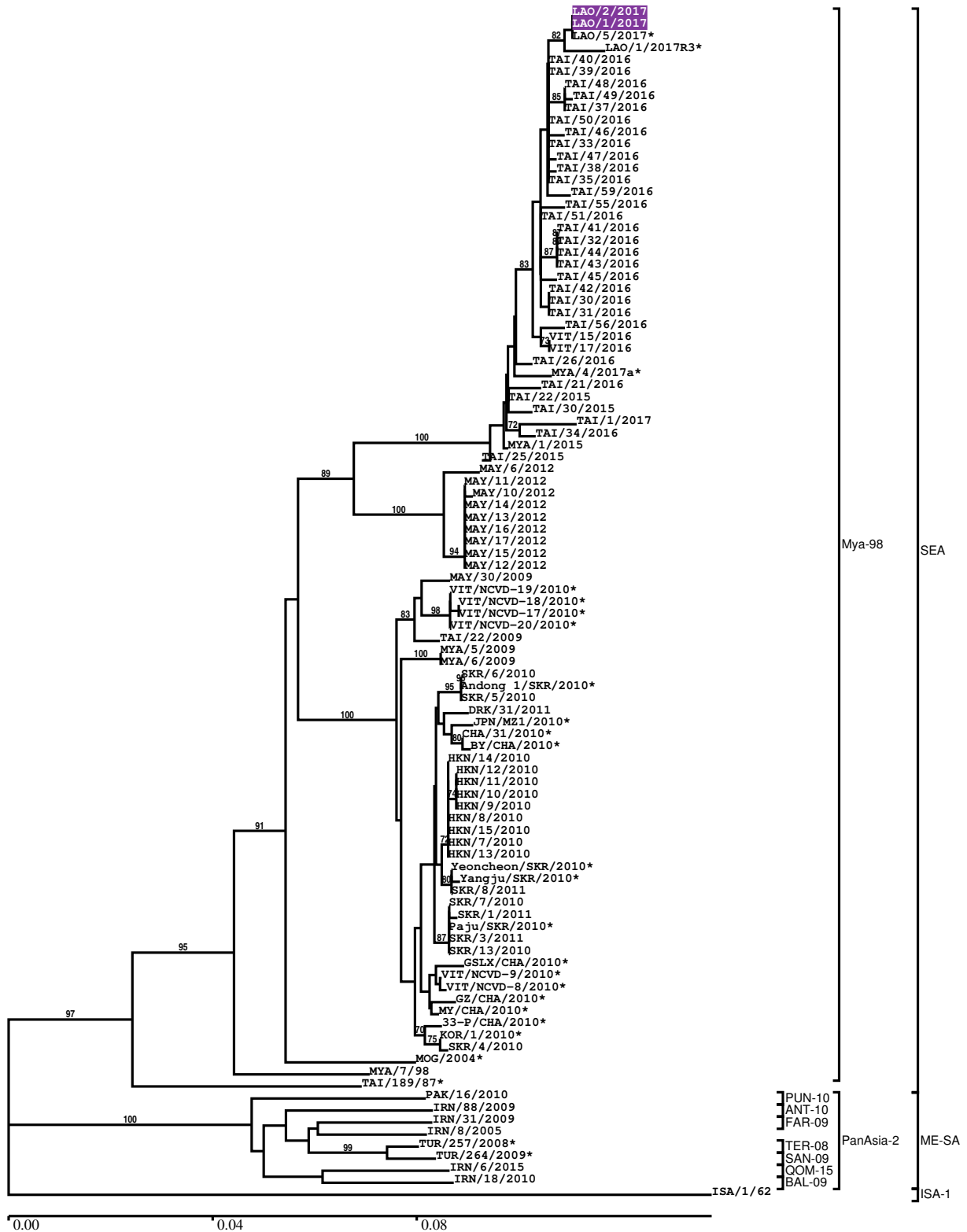
Most Closely Related Prototype Sequences

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

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_199	MYA/7/98	bovine	91.3	0	O	SEA	Mya-98	
viba_68	TAI/189/87	bovine	88.2	0	O	SEA		
viba_491	TUR/257/2008		84.2	0	O	ME-SA	PanAsia-2	TER-08
viba_766	IRN/31/2009	cattle	84.1	0	O	ME-SA	PanAsia-2	FAR-09
viba_650	IRN/8/2005	ovine	83.9	0	O	ME-SA	PanAsia-2	
viba_354	PAK/16/2010	cattle	83.9	0	O	ME-SA	PanAsia-2	PUN-10
viba_505	TUR/264/2009		83.8	0	O	ME-SA	PanAsia-2	SAN-09
viba_860	IRN/6/2015	cattle	83.8	0	O	ME-SA	PanAsia-2	QOM-15
viba_719	IRN/88/2009		83.6	0	O	ME-SA	PanAsia-2	ANT-10
viba_666	IRN/18/2010	cattle	83.5	0	O	ME-SA	PanAsia-2	BAL-09

Report on FMDV O in Laos in 2017

Batch: WRLFMD/2017/00013



*, not a WRLFMD Reference Number

Analysis Parameters

VP1 subsequence extractor:	vp1_O
Query sequence set:	WRLFMD/2017/00013-Laos-O (2 sequences)
Sequence database set:	allseqs_O (3543 sequences)
Prototype sequence set:	!prototypes_O (47 sequences)
Number of related sequences reported:	10
Minimal VP1 subsequence match length	600
Sequence alignment method:	muscle (default parameters)
Sequence alignment length:	636
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:	master-1.1.0-17-gf69a4d1

Sequences in the Phylogenetic Tree

All sequences in the tree are in taxonomic group FMDV/O

label	accession	host(s)	lab	country	taxonomic information
LAO/2/2017	n/a	cattle	WRLFMD	Laos	SEA/Mya-98
LAO/1/2017	n/a	cattle	WRLFMD	Laos	SEA/Mya-98
LAO/5/2017*	n/a	n/a	TRRL	Laos	SEA/Mya-98
LAO/1/2017R3*	n/a	n/a	TRRL	Laos	SEA/Mya-98
TAI/40/2016	n/a	cattle	WRLFMD	Thailand	SEA/Mya-98
TAI/39/2016	n/a	cattle	WRLFMD	Thailand	SEA/Mya-98
TAI/48/2016	n/a	cattle	WRLFMD	Thailand	SEA/Mya-98
TAI/49/2016	n/a	cattle	WRLFMD	Thailand	SEA/Mya-98
TAI/37/2016	n/a	cattle	WRLFMD	Thailand	SEA/Mya-98
TAI/50/2016	n/a	cattle	WRLFMD	Thailand	SEA/Mya-98
TAI/46/2016	n/a	cattle	WRLFMD	Thailand	SEA/Mya-98
TAI/33/2016	n/a	porcine	WRLFMD	Thailand	SEA/Mya-98
TAI/47/2016	n/a	cattle	WRLFMD	Thailand	SEA/Mya-98
TAI/38/2016	n/a	cattle	WRLFMD	Thailand	SEA/Mya-98
TAI/35/2016	n/a	cattle	WRLFMD	Thailand	SEA/Mya-98
TAI/59/2016	n/a	cattle	WRLFMD	Thailand	SEA/Mya-98
TAI/55/2016	n/a	cattle	WRLFMD	Thailand	SEA/Mya-98
TAI/51/2016	n/a	cattle	WRLFMD	Thailand	SEA/Mya-98
TAI/41/2016	n/a	cattle	WRLFMD	Thailand	SEA/Mya-98
TAI/32/2016	n/a	cattle	WRLFMD	Thailand	SEA/Mya-98
TAI/44/2016	n/a	cattle	WRLFMD	Thailand	SEA/Mya-98
TAI/43/2016	n/a	cattle	WRLFMD	Thailand	SEA/Mya-98
TAI/45/2016	n/a	cattle	WRLFMD	Thailand	SEA/Mya-98
TAI/42/2016	n/a	cattle	WRLFMD	Thailand	SEA/Mya-98
TAI/30/2016	n/a	cattle	WRLFMD	Thailand	SEA/Mya-98
TAI/31/2016	n/a	cattle	WRLFMD	Thailand	SEA/Mya-98
TAI/56/2016	n/a	cattle	WRLFMD	Thailand	SEA/Mya-98
VIT/15/2016	n/a	water buffalo	WRLFMD	Vietnam	SEA/Mya-98
VIT/17/2016	n/a	cattle	WRLFMD	Vietnam	SEA/Mya-98
TAI/26/2016	n/a	cattle	WRLFMD	Thailand	SEA/Mya-98
MYA/4/2017a*	n/a	cattle	TRRL	Myanmar	SEA/Mya-98
TAI/21/2016	n/a	cattle	WRLFMD	Thailand	SEA/Mya-98
TAI/22/2015	n/a	water buffalo	WRLFMD	Thailand	SEA/Mya-98
TAI/30/2015	n/a	cattle	WRLFMD	Thailand	SEA/Mya-98
TAI/1/2017	n/a	porcine	WRLFMD	Thailand	SEA/Mya-98
TAI/34/2016	n/a	cattle	WRLFMD	Thailand	SEA/Mya-98

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label	accession	host(s)	lab	country	taxonomic information
MYA/1/2015	n/a	bovine	WRLFMD	Myanmar	SEA/Mya-98
TAI/25/2015	n/a	cattle	WRLFMD	Thailand	SEA/Mya-98
MAY/6/2012	n/a	cattle	WRLFMD	Malaysia	SEA/Mya-98
MAY/11/2012	n/a	cattle	WRLFMD	Malaysia	SEA/Mya-98
MAY/10/2012	n/a	cattle	WRLFMD	Malaysia	SEA/Mya-98
MAY/14/2012	n/a	cattle	WRLFMD	Malaysia	SEA/Mya-98
MAY/13/2012	n/a	cattle	WRLFMD	Malaysia	SEA/Mya-98
MAY/16/2012	n/a	cattle	WRLFMD	Malaysia	SEA/Mya-98
MAY/17/2012	n/a	cattle	WRLFMD	Malaysia	SEA/Mya-98
MAY/15/2012	n/a	cattle	WRLFMD	Malaysia	SEA/Mya-98
MAY/12/2012	n/a	cattle	WRLFMD	Malaysia	SEA/Mya-98
MAY/30/2009	n/a	cattle	WRLFMD	Malaysia	SEA/Mya-98
VIT/NCVD-19/2010*	n/a	cattle	NVRQS	Vietnam	SEA/Mya-98
VIT/NCVD-18/2010*	n/a	cattle	NVRQS	Vietnam	SEA/Mya-98
VIT/NCVD-17/2010*	n/a	cattle	NVRQS	Vietnam	SEA/Mya-98
VIT/NCVD-20/2010*	n/a	cattle	NVRQS	Vietnam	SEA/Mya-98
TAI/22/2009	HQ116269	porcine	WRLFMD	Thailand	SEA/Mya-98
MYA/5/2009	HQ116228	cattle	WRLFMD	Myanmar	SEA/Mya-98
MYA/6/2009	HQ116229	cattle	WRLFMD	Myanmar	SEA/Mya-98
SKR/6/2010	n/a	porcine	WRLFMD	South Korea, Republic of	SEA/Mya-98
Andong 1/SKR/2010*	n/a	porcine	NVRQS	South Korea, Republic of	SEA/Mya-98
SKR/5/2010	JQ070321	porcine	WRLFMD	South Korea, Republic of	SEA/Mya-98
DRK/31/2011	n/a	cattle	WRLFMD	Democratic People's Republic of Korea	SEA/Mya-98
JPN/MZ1/2010*	AB618503	cattle	NIAH-Japan	Japan	SEA/Mya-98
CHA/31/2010*	JF792356	porcine	LVRI	China	SEA/Mya-98
BY/CHA/2010*	JN998085	porcine	LVRI	China	SEA/Mya-98
HKN/14/2010	n/a	porcine	WRLFMD	Hong Kong SAR	SEA/Mya-98
HKN/12/2010	n/a	porcine	WRLFMD	Hong Kong SAR	SEA/Mya-98
HKN/11/2010	n/a	porcine	WRLFMD	Hong Kong SAR	SEA/Mya-98
HKN/10/2010	n/a	porcine	WRLFMD	Hong Kong SAR	SEA/Mya-98
HKN/9/2010	JQ070304	porcine	WRLFMD	Hong Kong SAR	SEA/Mya-98
HKN/8/2010	n/a	porcine	WRLFMD	Hong Kong SAR	SEA/Mya-98
HKN/15/2010	n/a	porcine	WRLFMD	Hong Kong SAR	SEA/Mya-98
HKN/7/2010	JQ070303	porcine	WRLFMD	Hong Kong SAR	SEA/Mya-98
HKN/13/2010	n/a	porcine	WRLFMD	Hong Kong SAR	SEA/Mya-98
Yeoncheon/SKR/2010*	n/a	porcine	NVRQS	South Korea, Republic of	SEA/Mya-98
Yangju/SKR/2010*	n/a	porcine	NVRQS	South Korea, Republic of	SEA/Mya-98
SKR/8/2011	n/a	cattle	WRLFMD	South Korea, Republic of	SEA/Mya-98
SKR/7/2010	n/a	cattle	WRLFMD	South Korea, Republic of	SEA/Mya-98
SKR/1/2011	n/a	cattle	WRLFMD	South Korea, Republic of	SEA/Mya-98
Paju/SKR/2010*	n/a	cattle	NVRQS	South Korea, Republic of	SEA/Mya-98
SKR/3/2011	n/a	porcine	WRLFMD	South Korea, Republic of	SEA/Mya-98
SKR/13/2010	n/a	cattle	WRLFMD	South Korea, Republic of	SEA/Mya-98
GSLX/CHA/2010*	JQ900581	porcine	LVRI	China	SEA/Mya-98
VIT/NCVD-9/2010*	n/a	cattle	NVRQS	Vietnam	SEA/Mya-98

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label	accession	host(s)	lab	country	taxonomic information
VIT/NCVD-8/2010*	n/a	cattle	NVRQS	Vietnam	SEA/Mya-98
GZ/CHA/2010*	JN998086	cattle	LVRI	China	SEA/Mya-98
MY/CHA/2010*	HQ652079	porcine	SiChuan University	China	SEA/Mya-98
33-P/CHA/2010*	JQ973889	bovine	LVRI	China	SEA/Mya-98
KOR/1/2010*	HM143846	cattle	NVRQS	South Korea, Republic of	SEA/Mya-98
SKR/4/2010	JQ070320	cattle	WRLFMD	South Korea, Republic of	SEA/Mya-98
MOG/2004*	JQ070324	n/a	ARRIAH	Mongolia	SEA/Mya-98
MYA/7/98	DQ164925	bovine	WRLFMD	Myanmar	SEA/Mya-98
TAI/189/87*	KY091288	bovine	TRRL	Thailand	SEA
PAK/16/2010	KY091285	cattle	WRLFMD	Pakistan	ME-SA/PanAsia-2/PUN-10
IRN/88/2009	KY091285	n/a	WRLFMD	Iran	ME-SA/PanAsia-2/ANT-10
IRN/31/2009	KY091284	cattle	WRLFMD	Iran	ME-SA/PanAsia-2/FAR-09
IRN/8/2005	KY091281	ovine	WRLFMD	Iran	ME-SA/PanAsia-2
TUR/257/2008*	n/a	n/a	FMDI-Ankara	Turkey	ME-SA/PanAsia-2/TER-08
TUR/264/2009*	n/a	n/a	FMDI-Ankara	Turkey	ME-SA/PanAsia-2/SAN-09
IRN/6/2015	n/a	cattle	WRLFMD	Iran	ME-SA/PanAsia-2/QOM-15
IRN/18/2010	KY091283	cattle	WRLFMD	Iran	ME-SA/PanAsia-2/BAL-09
ISA/1/62	AJ303500	n/a	WRLFMD	Indonesia	ISA-1

*, not a WRLFMD Reference Number

n/a, not available