

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

## Genotyping Report

FMDV serotype: O  
Country: Cambodia  
Year: 2018  
Batch: WRLFMD/2020/00008  
No. of sequences: 9  
Report date: 8th February 2021  
Report generated by: Nick Knowles  
Report checked by: Jemma Wadsworth



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

email: [reporting@pirbright.ac.uk](mailto:reporting@pirbright.ac.uk)

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Virus sample name:	CAM/1/2018
Sender reference:	CAM 1/18
Location of origin:	Khmer Village, Bosbauv Commune, Preah Netr Preah District, Banteay Meanechey Province
Country of origin:	Cambodia
Date of collection:	01/01/2018
Host species:	cattle
Serotype:	O
Topotype:	ME-SA
Lineage:	PanAsia
Sublineage:	
Sequence length:	633
Ambiguities:	0
Material submitted for sequencing:	BTy1
Harvest date of material:	16/01/2021
Primers:	O-1C244F/EUR-2B52R, FMD-3161F/FMD-4303R
Received for sequencing:	28/01/2021
Created:	08/02/2021
Last updated:	08/02/2021

VIBASys IDs: sample 47244, genome 47245, sequence viba\_47246, sequencing info 47247

#### Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_37668	TAI/12/2017	cattle	99.4	0	O	ME-SA	PanAsia	
viba_36461	VIT/18/2017	bovine	99.4	0	O	ME-SA	PanAsia	
viba_37707	LAO/1/2018	cattle	99.2	0	O	ME-SA	PanAsia	
viba_37696	TAI/5/2018	cattle	99.2	0	O	ME-SA	PanAsia	
viba_37688	TAI/3/2018	cattle	99.2	0	O	ME-SA	PanAsia	
viba_36481	VIT/29/2017	bovine	99.1	0	O	ME-SA	PanAsia	
viba_36493	VIT/32/2017	bovine	99.1	0	O	ME-SA	PanAsia	
viba_36497	VIT/1/2018	bovine	99.1	0	O	ME-SA	PanAsia	
viba_37680	TAI/16/2017	cattle	99.1	0	O	ME-SA	PanAsia	
viba_40596	VIT/9/2018	porcine	99.1	0	O	ME-SA	PanAsia	

#### Most Closely Related Prototype Sequences

see <http://www.wrlfmd.org/fmdv-genome/fmd-prototype-strains>

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_285	UKG/35/2001	porcine	91.8	0	O	ME-SA	PanAsia	
viba_705	KUW/3/97	bovine	91.2	0	O	ME-SA	Ind-2001	a
viba_293	BHU/3/2009	cattle	90.7	0	O	ME-SA	Ind-2001	d
viba_541	OMN/7/2001	bovine	90.5	0	O	ME-SA	Ind-2001	b
viba_505	TUR/264/2009		90.0	0	O	ME-SA	PanAsia-2	SAN-09
viba_650	IRN/8/2005	ovine	89.6	0	O	ME-SA	PanAsia-2	
viba_766	IRN/31/2009	cattle	89.6	0	O	ME-SA	PanAsia-2	FAR-09
viba_397	UAE/4/2008	gazelle	89.6	0	O	ME-SA	Ind-2001	c
viba_30238	MUR/19/2016	cattle	89.5	0	O	ME-SA	Ind-2001	e
viba_491	TUR/257/2008		89.4	0	O	ME-SA	PanAsia-2	TER-08

Virus sample name:	CAM/2/2018
Sender reference:	CAM 13/18
Location of origin:	Veal Village, Kampong Seila Commune, Seila District, Praeah Sihanou Province
Country of origin:	Cambodia
Date of collection:	03/05/2018
Host species:	cattle
Serotype:	O
Topotype:	ME-SA
Lineage:	PanAsia
Sublineage:	
Sequence length:	633
Ambiguities:	0
Material submitted for sequencing:	BTy1
Harvest date of material:	16/01/2021
Primers:	O-1C244F/EUR-2B52R, FMD-3161F/FMD-4303R
Received for sequencing:	28/01/2021
Created:	08/02/2021
Last updated:	08/02/2021
VIBASys IDs: sample 47248, genome 47249, sequence viba_47250, sequencing info 47251	

#### Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_47266	CAM/6/2018	water buffalo	100.0	0	O	ME-SA	PanAsia	
viba_47270	CAM/7/2018	cattle	100.0	0	O	ME-SA	PanAsia	
viba_36497	VIT/1/2018	bovine	99.1	0	O	ME-SA	PanAsia	
viba_36461	VIT/18/2017	bovine	99.1	0	O	ME-SA	PanAsia	
viba_47254	CAM/3/2018	cattle	98.9	0	O	ME-SA	PanAsia	
viba_40576	VIT/3/2018	cattle	98.9	0	O	ME-SA	PanAsia	
viba_47262	CAM/5/2018	cattle	98.9	0	O	ME-SA	PanAsia	
viba_36481	VIT/29/2017	bovine	98.7	0	O	ME-SA	PanAsia	
viba_36493	VIT/32/2017	bovine	98.7	0	O	ME-SA	PanAsia	
viba_37668	TAI/12/2017	cattle	98.7	0	O	ME-SA	PanAsia	

#### Most Closely Related Prototype Sequences

see <http://www.wrlfmd.org/fmdv-genome/fmd-prototype-strains>

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_285	UKG/35/2001	porcine	91.3	0	O	ME-SA	PanAsia	
viba_705	KUW/3/97	bovine	91.0	0	O	ME-SA	Ind-2001	a
viba_541	OMN/7/2001	bovine	90.4	0	O	ME-SA	Ind-2001	b
viba_293	BHU/3/2009	cattle	90.2	0	O	ME-SA	Ind-2001	d
viba_505	TUR/264/2009		89.6	0	O	ME-SA	PanAsia-2	SAN-09
viba_650	IRN/8/2005	ovine	89.4	0	O	ME-SA	PanAsia-2	
viba_766	IRN/31/2009	cattle	89.4	0	O	ME-SA	PanAsia-2	FAR-09
viba_397	UAE/4/2008	gazelle	89.4	0	O	ME-SA	Ind-2001	c
viba_30238	MUR/19/2016	cattle	89.3	0	O	ME-SA	Ind-2001	e
viba_491	TUR/257/2008		89.3	0	O	ME-SA	PanAsia-2	TER-08

Virus sample name:	CAM/3/2018
Sender reference:	CAM 17/18
Location of origin:	Ta Ngk Village, Romchek Commune, Preah Stech District, Prey Veng Province
Country of origin:	Cambodia
Date of collection:	17/05/2018
Host species:	cattle
Serotype:	O
Topotype:	ME-SA
Lineage:	PanAsia
Sublineage:	
Sequence length:	633
Ambiguities:	0
Material submitted for sequencing:	BTy1
Harvest date of material:	16/01/2021
Primers:	O-1C244F/EUR-2B52R, FMD-3161F/FMD-4303R
Received for sequencing:	28/01/2021
Created:	08/02/2021
Last updated:	08/02/2021
VIBASys IDs: sample 47252, genome 47253, sequence viba_47254, sequencing info 47255	

### Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_47262	CAM/5/2018	cattle	100.0	0	O	ME-SA	PanAsia	
viba_36461	VIT/18/2017	bovine	99.5	0	O	ME-SA	PanAsia	
viba_37696	TAI/5/2018	cattle	99.4	0	O	ME-SA	PanAsia	
viba_37688	TAI/3/2018	cattle	99.4	0	O	ME-SA	PanAsia	
viba_36481	VIT/29/2017	bovine	99.2	0	O	ME-SA	PanAsia	
viba_36493	VIT/32/2017	bovine	99.2	0	O	ME-SA	PanAsia	
viba_37668	TAI/12/2017	cattle	99.2	0	O	ME-SA	PanAsia	
viba_36497	VIT/1/2018	bovine	99.2	0	O	ME-SA	PanAsia	
viba_40596	VIT/9/2018	porcine	99.2	0	O	ME-SA	PanAsia	
viba_35454	BaTri/VIT/17-19372	cattle	99.2	0	O	ME-SA	PanAsia	

### Most Closely Related Prototype Sequences

see <http://www.wrlfmd.org/fmdv-genome/fmd-prototype-strains>

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_285	UKG/35/2001	porcine	91.5	0	O	ME-SA	PanAsia	
viba_705	KUW/3/97	bovine	91.2	0	O	ME-SA	Ind-2001	a
viba_541	OMN/7/2001	bovine	90.5	0	O	ME-SA	Ind-2001	b
viba_293	BHU/3/2009	cattle	90.4	0	O	ME-SA	Ind-2001	d
viba_505	TUR/264/2009		89.7	0	O	ME-SA	PanAsia-2	SAN-09
viba_397	UAE/4/2008	gazelle	89.6	0	O	ME-SA	Ind-2001	c
viba_30238	MUR/19/2016	cattle	89.5	0	O	ME-SA	Ind-2001	e
viba_359	Manisa/TUR/69		89.3	0	O	ME-SA		
viba_650	IRN/8/2005	ovine	89.3	0	O	ME-SA	PanAsia-2	
viba_766	IRN/31/2009	cattle	89.3	0	O	ME-SA	PanAsia-2	FAR-09

Virus sample name:	CAM/4/2018
Sender reference:	CAM 20/18
Location of origin:	Topnup Village, Sen Dei Commune, Samrong Thoung District, Kampong Speu Province
Country of origin:	Cambodia
Date of collection:	30/05/2018
Host species:	cattle
Serotype:	O
Topotype:	ME-SA
Lineage:	PanAsia
Sublineage:	
Sequence length:	633
Ambiguities:	0
Material submitted for sequencing:	BTy1
Harvest date of material:	16/01/2021
Primers:	O-1C244F/EUR-2B52R, FMD-3161F/FMD-4303R
Received for sequencing:	28/01/2020
Created:	08/02/2021
Last updated:	08/02/2021
VIBASys IDs: sample 47256, genome 47257, sequence viba_47258, sequencing info 47259	

### Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_40580	VIT/5/2018	porcine	99.5	0	O	ME-SA	PanAsia	
viba_36461	VIT/18/2017	bovine	99.4	0	O	ME-SA	PanAsia	
viba_47274	CAM/8/2018	cattle	99.2	0	O	ME-SA	PanAsia	
viba_36481	VIT/29/2017	bovine	99.1	0	O	ME-SA	PanAsia	
viba_36493	VIT/32/2017	bovine	99.1	0	O	ME-SA	PanAsia	
viba_37668	TAI/12/2017	cattle	99.1	0	O	ME-SA	PanAsia	
viba_36497	VIT/1/2018	bovine	99.1	0	O	ME-SA	PanAsia	
viba_40596	VIT/9/2018	porcine	99.1	0	O	ME-SA	PanAsia	
viba_35454	BaTri/VIT/17-19372	cattle	99.1	0	O	ME-SA	PanAsia	
viba_47254	CAM/3/2018	cattle	98.9	0	O	ME-SA	PanAsia	

### Most Closely Related Prototype Sequences

see <http://www.wrlfmd.org/fmdv-genome/fmd-prototype-strains>

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_285	UKG/35/2001	porcine	91.6	0	O	ME-SA	PanAsia	
viba_705	KUW/3/97	bovine	90.7	0	O	ME-SA	Ind-2001	a
viba_293	BHU/3/2009	cattle	90.5	0	O	ME-SA	Ind-2001	d
viba_541	OMN/7/2001	bovine	90.4	0	O	ME-SA	Ind-2001	b
viba_505	TUR/264/2009		89.9	0	O	ME-SA	PanAsia-2	SAN-09
viba_30238	MUR/19/2016	cattle	89.6	0	O	ME-SA	Ind-2001	e
viba_397	UAE/4/2008	gazelle	89.6	0	O	ME-SA	Ind-2001	c
viba_359	Manisa/TUR/69		89.4	0	O	ME-SA		
viba_650	IRN/8/2005	ovine	89.4	0	O	ME-SA	PanAsia-2	
viba_766	IRN/31/2009	cattle	89.4	0	O	ME-SA	PanAsia-2	FAR-09

Virus sample name:	CAM/5/2018
Sender reference:	CAM 42/18
Location of origin:	Chhuol Village, Sria Huy Commune, Korh Nheak District, Mondul Kiri Province
Country of origin:	Cambodia
Date of collection:	10/08/2018
Host species:	cattle
Serotype:	O
Topotype:	ME-SA
Lineage:	PanAsia
Sublineage:	
Sequence length:	633
Ambiguities:	0
Material submitted for sequencing:	BTy1
Harvest date of material:	16/01/2021
Primers:	O-1C244F/EUR-2B52R, FMD-3161F/FMD-4303R
Received for sequencing:	28/01/2021
Created:	08/02/2021
Last updated:	08/02/2021
VIBASys IDs: sample 47260, genome 47261, sequence viba_47262, sequencing info 47263	

### Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_47254	CAM/3/2018	cattle	100.0	0	O	ME-SA	PanAsia	
viba_36461	VIT/18/2017	bovine	99.5	0	O	ME-SA	PanAsia	
viba_37696	TAI/5/2018	cattle	99.4	0	O	ME-SA	PanAsia	
viba_37688	TAI/3/2018	cattle	99.4	0	O	ME-SA	PanAsia	
viba_36481	VIT/29/2017	bovine	99.2	0	O	ME-SA	PanAsia	
viba_36493	VIT/32/2017	bovine	99.2	0	O	ME-SA	PanAsia	
viba_37668	TAI/12/2017	cattle	99.2	0	O	ME-SA	PanAsia	
viba_36497	VIT/1/2018	bovine	99.2	0	O	ME-SA	PanAsia	
viba_40596	VIT/9/2018	porcine	99.2	0	O	ME-SA	PanAsia	
viba_35454	BaTri/VIT/17-19372	cattle	99.2	0	O	ME-SA	PanAsia	

### Most Closely Related Prototype Sequences

see <http://www.wrlfmd.org/fmdv-genome/fmd-prototype-strains>

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_285	UKG/35/2001	porcine	91.5	0	O	ME-SA	PanAsia	
viba_705	KUW/3/97	bovine	91.2	0	O	ME-SA	Ind-2001	a
viba_541	OMN/7/2001	bovine	90.5	0	O	ME-SA	Ind-2001	b
viba_293	BHU/3/2009	cattle	90.4	0	O	ME-SA	Ind-2001	d
viba_505	TUR/264/2009		89.7	0	O	ME-SA	PanAsia-2	SAN-09
viba_397	UAE/4/2008	gazelle	89.6	0	O	ME-SA	Ind-2001	c
viba_30238	MUR/19/2016	cattle	89.5	0	O	ME-SA	Ind-2001	e
viba_359	Manisa/TUR/69		89.3	0	O	ME-SA		
viba_650	IRN/8/2005	ovine	89.3	0	O	ME-SA	PanAsia-2	
viba_766	IRN/31/2009	cattle	89.3	0	O	ME-SA	PanAsia-2	FAR-09

Virus sample name:	CAM/6/2018
Sender reference:	CAM 46/18
Location of origin:	Chhuol Village, Sria Huy Commune, Korh Nheak District, Mondul Kiri Province
Country of origin:	Cambodia
Date of collection:	10/08/2018
Host species:	water buffalo
Serotype:	O
Topotype:	ME-SA
Lineage:	PanAsia
Sublineage:	
Sequence length:	633
Ambiguities:	0
Material submitted for sequencing:	BTy1
Harvest date of material:	16/01/2021
Primers:	O-1C244F/EUR-2B52R, FMD-3161F/FMD-4303R
Received for sequencing:	28/01/2021
Created:	08/02/2021
Last updated:	08/02/2021
VIBASys IDs: sample 47264, genome 47265, sequence viba_47266, sequencing info 47267	

#### Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_47270	CAM/7/2018	cattle	100.0	0	O	ME-SA	PanAsia	
viba_47250	CAM/2/2018	cattle	100.0	0	O	ME-SA	PanAsia	
viba_36497	VIT/1/2018	bovine	99.1	0	O	ME-SA	PanAsia	
viba_36461	VIT/18/2017	bovine	99.1	0	O	ME-SA	PanAsia	
viba_47254	CAM/3/2018	cattle	98.9	0	O	ME-SA	PanAsia	
viba_40576	VIT/3/2018	cattle	98.9	0	O	ME-SA	PanAsia	
viba_47262	CAM/5/2018	cattle	98.9	0	O	ME-SA	PanAsia	
viba_36481	VIT/29/2017	bovine	98.7	0	O	ME-SA	PanAsia	
viba_36493	VIT/32/2017	bovine	98.7	0	O	ME-SA	PanAsia	
viba_37668	TAI/12/2017	cattle	98.7	0	O	ME-SA	PanAsia	

#### Most Closely Related Prototype Sequences

see <http://www.wrlfmd.org/fmdv-genome/fmd-prototype-strains>

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_285	UKG/35/2001	porcine	91.3	0	O	ME-SA	PanAsia	
viba_705	KUW/3/97	bovine	91.0	0	O	ME-SA	Ind-2001	a
viba_541	OMN/7/2001	bovine	90.4	0	O	ME-SA	Ind-2001	b
viba_293	BHU/3/2009	cattle	90.2	0	O	ME-SA	Ind-2001	d
viba_505	TUR/264/2009		89.6	0	O	ME-SA	PanAsia-2	SAN-09
viba_650	IRN/8/2005	ovine	89.4	0	O	ME-SA	PanAsia-2	
viba_766	IRN/31/2009	cattle	89.4	0	O	ME-SA	PanAsia-2	FAR-09
viba_397	UAE/4/2008	gazelle	89.4	0	O	ME-SA	Ind-2001	c
viba_30238	MUR/19/2016	cattle	89.3	0	O	ME-SA	Ind-2001	e
viba_491	TUR/257/2008		89.3	0	O	ME-SA	PanAsia-2	TER-08

Virus sample name:	CAM/7/2018
Sender reference:	CAM 48/18
Location of origin:	Porieng Cheung Village, Porieng Commune, Porieng District, Prey Veng Province
Country of origin:	Cambodia
Date of collection:	15/08/2018
Host species:	cattle
Serotype:	O
Topotype:	ME-SA
Lineage:	PanAsia
Sublineage:	
Sequence length:	633
Ambiguities:	0
Material submitted for sequencing:	BTy1
Harvest date of material:	16/01/2021
Primers:	O-1C244F/EUR-2B52R, FMD-3161F/FMD-4303R
Received for sequencing:	28/01/2021
Created:	08/02/2021
Last updated:	08/02/2021
VIBASys IDs: sample 47268, genome 47269, sequence viba_47270, sequencing info 47271	

#### Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_47266	CAM/6/2018	water buffalo	100.0	0	O	ME-SA	PanAsia	
viba_47250	CAM/2/2018	cattle	100.0	0	O	ME-SA	PanAsia	
viba_36497	VIT/1/2018	bovine	99.1	0	O	ME-SA	PanAsia	
viba_36461	VIT/18/2017	bovine	99.1	0	O	ME-SA	PanAsia	
viba_47254	CAM/3/2018	cattle	98.9	0	O	ME-SA	PanAsia	
viba_40576	VIT/3/2018	cattle	98.9	0	O	ME-SA	PanAsia	
viba_47262	CAM/5/2018	cattle	98.9	0	O	ME-SA	PanAsia	
viba_36481	VIT/29/2017	bovine	98.7	0	O	ME-SA	PanAsia	
viba_36493	VIT/32/2017	bovine	98.7	0	O	ME-SA	PanAsia	
viba_37668	TAI/12/2017	cattle	98.7	0	O	ME-SA	PanAsia	

#### Most Closely Related Prototype Sequences

see <http://www.wrlfmd.org/fmdv-genome/fmd-prototype-strains>

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_285	UKG/35/2001	porcine	91.3	0	O	ME-SA	PanAsia	
viba_705	KUW/3/97	bovine	91.0	0	O	ME-SA	Ind-2001	a
viba_541	OMN/7/2001	bovine	90.4	0	O	ME-SA	Ind-2001	b
viba_293	BHU/3/2009	cattle	90.2	0	O	ME-SA	Ind-2001	d
viba_505	TUR/264/2009		89.6	0	O	ME-SA	PanAsia-2	SAN-09
viba_650	IRN/8/2005	ovine	89.4	0	O	ME-SA	PanAsia-2	
viba_766	IRN/31/2009	cattle	89.4	0	O	ME-SA	PanAsia-2	FAR-09
viba_397	UAE/4/2008	gazelle	89.4	0	O	ME-SA	Ind-2001	c
viba_30238	MUR/19/2016	cattle	89.3	0	O	ME-SA	Ind-2001	e
viba_491	TUR/257/2008		89.3	0	O	ME-SA	PanAsia-2	TER-08



Virus sample name:	CAM/8/2018
Sender reference:	CAM 52/18
Location of origin:	Chamkamom Village, Taken Commune, Chouk District, Kampot Province
Country of origin:	Cambodia
Date of collection:	05/09/2018
Host species:	cattle
Serotype:	O
Topotype:	ME-SA
Lineage:	PanAsia
Sublineage:	
Sequence length:	633
Ambiguities:	0
Material submitted for sequencing:	BTy1
Harvest date of material:	16/01/2021
Primers:	O-1C244F/EUR-2B52R, FMD-3161F/FMD-4303R
Received for sequencing:	28/01/2021
Created:	08/02/2021
Last updated:	08/02/2021
VIBASys IDs: sample 47272, genome 47273, sequence viba_47274, sequencing info 47275	

#### Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_40580	VIT/5/2018	porcine	99.4	0	O	ME-SA	PanAsia	
viba_47258	CAM/4/2018	cattle	99.2	0	O	ME-SA	PanAsia	
viba_36461	VIT/18/2017	bovine	99.2	0	O	ME-SA	PanAsia	
viba_36481	VIT/29/2017	bovine	98.9	0	O	ME-SA	PanAsia	
viba_36493	VIT/32/2017	bovine	98.9	0	O	ME-SA	PanAsia	
viba_37668	TAI/12/2017	cattle	98.9	0	O	ME-SA	PanAsia	
viba_36497	VIT/1/2018	bovine	98.9	0	O	ME-SA	PanAsia	
viba_40596	VIT/9/2018	porcine	98.9	0	O	ME-SA	PanAsia	
viba_35454	BaTri/VIT/17-19372	cattle	98.9	0	O	ME-SA	PanAsia	
viba_47254	CAM/3/2018	cattle	98.7	0	O	ME-SA	PanAsia	

#### Most Closely Related Prototype Sequences

see <http://www.wrlfmd.org/fmdv-genome/fmd-prototype-strains>

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_285	UKG/35/2001	porcine	91.2	0	O	ME-SA	PanAsia	
viba_705	KUW/3/97	bovine	90.5	0	O	ME-SA	Ind-2001	a
viba_293	BHU/3/2009	cattle	90.4	0	O	ME-SA	Ind-2001	d
viba_541	OMN/7/2001	bovine	89.9	0	O	ME-SA	Ind-2001	b
viba_505	TUR/264/2009		89.7	0	O	ME-SA	PanAsia-2	SAN-09
viba_397	UAE/4/2008	gazelle	89.4	0	O	ME-SA	Ind-2001	c
viba_650	IRN/8/2005	ovine	89.3	0	O	ME-SA	PanAsia-2	
viba_766	IRN/31/2009	cattle	89.3	0	O	ME-SA	PanAsia-2	FAR-09
viba_30238	MUR/19/2016	cattle	89.2	0	O	ME-SA	Ind-2001	e
viba_491	TUR/257/2008		89.1	0	O	ME-SA	PanAsia-2	TER-08

Virus sample name:	CAM/9/2018
Sender reference:	CAM 72/18
Location of origin:	Mrinh Village, Baneaychakrei Commune, Preah Stechdistrict, Prey Veng Province
Country of origin:	Cambodia
Date of collection:	14/09/2018
Host species:	cattle
Serotype:	O
Topotype:	ME-SA
Lineage:	PanAsia
Sublineage:	
Sequence length:	633
Ambiguities:	0
Material submitted for sequencing:	BTy1
Harvest date of material:	16/01/2021
Primers:	O-1C244F/EUR-2B52R, FMD-3161F/FMD-4303R
Received for sequencing:	28/01/2021
Created:	08/02/2021
Last updated:	08/02/2021
VIBASys IDs: sample 47276, genome 47277, sequence viba_47278, sequencing info 47279	

#### Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_37668	TAI/12/2017	cattle	98.3	0	O	ME-SA	PanAsia	
viba_37707	LAO/1/2018	cattle	98.1	0	O	ME-SA	PanAsia	
viba_37696	TAI/5/2018	cattle	98.1	0	O	ME-SA	PanAsia	
viba_37688	TAI/3/2018	cattle	98.1	0	O	ME-SA	PanAsia	
viba_36481	VIT/29/2017	bovine	97.9	0	O	ME-SA	PanAsia	
viba_36493	VIT/32/2017	bovine	97.9	0	O	ME-SA	PanAsia	
viba_37680	TAI/16/2017	cattle	97.9	0	O	ME-SA	PanAsia	
viba_36461	VIT/18/2017	bovine	97.9	0	O	ME-SA	PanAsia	
viba_35454	BaTri/VIT/17-19372	cattle	97.9	0	O	ME-SA	PanAsia	
viba_47254	CAM/3/2018	cattle	97.8	0	O	ME-SA	PanAsia	

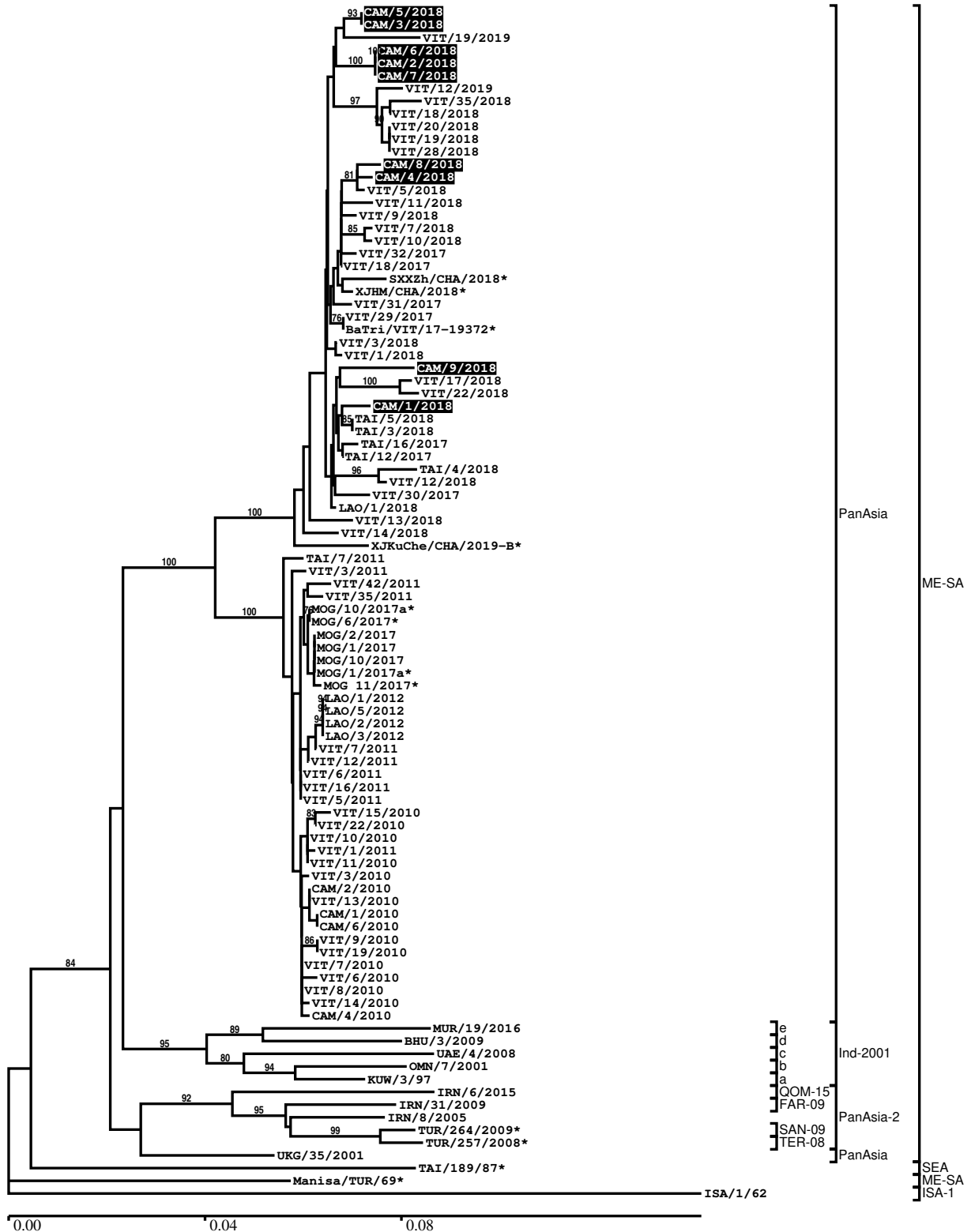
#### Most Closely Related Prototype Sequences

see <http://www.wrlfmd.org/fmdv-genome/fmd-prototype-strains>

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_285	UKG/35/2001	porcine	90.5	0	O	ME-SA	PanAsia	
viba_705	KUW/3/97	bovine	90.2	0	O	ME-SA	Ind-2001	a
viba_293	BHU/3/2009	cattle	90.0	0	O	ME-SA	Ind-2001	d
viba_541	OMN/7/2001	bovine	89.6	0	O	ME-SA	Ind-2001	b
viba_30238	MUR/19/2016	cattle	89.2	0	O	ME-SA	Ind-2001	e
viba_505	TUR/264/2009		89.1	0	O	ME-SA	PanAsia-2	SAN-09
viba_860	IRN/6/2015	cattle	88.9	0	O	ME-SA	PanAsia-2	QOM-15
viba_359	Manisa/TUR/69		88.6	0	O	ME-SA		
viba_650	IRN/8/2005	ovine	88.6	0	O	ME-SA	PanAsia-2	
viba_397	UAE/4/2008	gazelle	88.6	0	O	ME-SA	Ind-2001	c

Report on FMDV O in Cambodia in 2018

Batch: WRLFMD/2020/00008



\*, not a WRLFMD Reference Number

## Analysis Parameters

VP1 subsequence extractor:	vp1_O
Query sequence set:	WRLFMD/2020/00008-Cambodia-O (9 sequences)
Sequence database set:	allseqs_O (5144 sequences)
Prototype sequence set:	!prototypes_O (49 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:	12
VIBASys version:	reflabs-1.1.2

## Sequences in the Phylogenetic Tree

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

label	accession	host(s)	lab	country	taxonomic information
CAM/5/2018	n/a	cattle	WRLFMD	Cambodia	ME-SA/PanAsia
CAM/3/2018	n/a	cattle	WRLFMD	Cambodia	ME-SA/PanAsia
VIT/19/2019	n/a	water buffalo	WRLFMD	Vietnam	ME-SA/PanAsia
CAM/6/2018	n/a	water buffalo	WRLFMD	Cambodia	ME-SA/PanAsia
CAM/2/2018	n/a	cattle	WRLFMD	Cambodia	ME-SA/PanAsia
CAM/7/2018	n/a	cattle	WRLFMD	Cambodia	ME-SA/PanAsia
VIT/12/2019	n/a	porcine	WRLFMD	Vietnam	ME-SA/PanAsia
VIT/35/2018	n/a	cattle	WRLFMD	Vietnam	ME-SA/PanAsia
VIT/18/2018	n/a	n/a	WRLFMD	Vietnam	ME-SA/PanAsia
VIT/20/2018	n/a	cattle	WRLFMD	Vietnam	ME-SA/PanAsia
VIT/19/2018	n/a	porcine	WRLFMD	Vietnam	ME-SA/PanAsia
VIT/28/2018	n/a	porcine	WRLFMD	Vietnam	ME-SA/PanAsia
CAM/8/2018	n/a	cattle	WRLFMD	Cambodia	ME-SA/PanAsia
CAM/4/2018	n/a	cattle	WRLFMD	Cambodia	ME-SA/PanAsia
VIT/5/2018	n/a	porcine	WRLFMD	Vietnam	ME-SA/PanAsia
VIT/11/2018	n/a	cattle	WRLFMD	Vietnam	ME-SA/PanAsia
VIT/9/2018	n/a	porcine	WRLFMD	Vietnam	ME-SA/PanAsia
VIT/7/2018	n/a	cattle	WRLFMD	Vietnam	ME-SA/PanAsia
VIT/10/2018	n/a	porcine	WRLFMD	Vietnam	ME-SA/PanAsia
VIT/32/2017	n/a	bovine	WRLFMD	Vietnam	ME-SA/PanAsia
VIT/18/2017	n/a	bovine	WRLFMD	Vietnam	ME-SA/PanAsia
SXXZh/CHA/2018*	MH791317	cattle	LVRI	China	ME-SA/PanAsia
XJHM/CHA/2018*	MH807443	cattle	LVRI	China	ME-SA/PanAsia
VIT/31/2017	n/a	bovine	WRLFMD	Vietnam	ME-SA/PanAsia
VIT/29/2017	n/a	bovine	WRLFMD	Vietnam	ME-SA/PanAsia
BaTri/VIT/17-19372*	n/a	cattle	RAHO6	Vietnam	ME-SA/PanAsia
VIT/3/2018	n/a	cattle	WRLFMD	Vietnam	ME-SA/PanAsia
VIT/1/2018	n/a	bovine	WRLFMD	Vietnam	ME-SA/PanAsia
CAM/9/2018	n/a	cattle	WRLFMD	Cambodia	ME-SA/PanAsia
VIT/17/2018	n/a	porcine	WRLFMD	Vietnam	ME-SA/PanAsia
VIT/22/2018	n/a	water buffalo	WRLFMD	Vietnam	ME-SA/PanAsia
CAM/1/2018	n/a	cattle	WRLFMD	Cambodia	ME-SA/PanAsia
TAI/5/2018	n/a	cattle	WRLFMD	Thailand	ME-SA/PanAsia
TAI/3/2018	n/a	cattle	WRLFMD	Thailand	ME-SA/PanAsia
TAI/16/2017	n/a	cattle	WRLFMD	Thailand	ME-SA/PanAsia
TAI/12/2017	n/a	cattle	WRLFMD	Thailand	ME-SA/PanAsia

*continued on next page*

label	accession	host(s)	lab	country	taxonomic information
TAI/4/2018	n/a	cattle	WRLFMD	Thailand	ME-SA/PanAsia
VIT/12/2018	n/a	cattle	WRLFMD	Vietnam	ME-SA/PanAsia
VIT/30/2017	n/a	bovine	WRLFMD	Vietnam	ME-SA/PanAsia
LAO/1/2018	n/a	cattle	WRLFMD	Laos	ME-SA/PanAsia
VIT/13/2018	n/a	water buffalo	WRLFMD	Vietnam	ME-SA/PanAsia
VIT/14/2018	n/a	cattle	WRLFMD	Vietnam	ME-SA/PanAsia
XJKuChe/CHA/2019-B*	n/a	cattle	LVRI	China	ME-SA/PanAsia
TAI/7/2011	n/a	cattle	WRLFMD	Thailand	ME-SA/PanAsia
VIT/3/2011	n/a	porcine	WRLFMD	Vietnam	ME-SA/PanAsia
VIT/42/2011	n/a	porcine	WRLFMD	Vietnam	ME-SA/PanAsia
VIT/35/2011	n/a	cattle	WRLFMD	Vietnam	ME-SA/PanAsia
MOG/10/2017a*	n/a	cattle	ARRIAH	Mongolia	ME-SA/PanAsia
MOG/6/2017*	n/a	gazelle	ARRIAH	Mongolia	ME-SA/PanAsia
MOG/2/2017	n/a	cattle	WRLFMD	Mongolia	ME-SA/PanAsia
MOG/1/2017	n/a	cattle	WRLFMD	Mongolia	ME-SA/PanAsia
MOG/10/2017	n/a	cattle	WRLFMD	Mongolia	ME-SA/PanAsia
MOG/1/2017a*	n/a	cattle	ARRIAH	Mongolia	ME-SA/PanAsia
MOG 11/2017*	n/a	cattle	ARRIAH	Mongolia	ME-SA/PanAsia
LAO/1/2012	n/a	cattle	WRLFMD	Laos	ME-SA/PanAsia
LAO/5/2012	n/a	cattle	WRLFMD	Laos	ME-SA/PanAsia
LAO/2/2012	n/a	cattle	WRLFMD	Laos	ME-SA/PanAsia
LAO/3/2012	n/a	cattle	WRLFMD	Laos	ME-SA/PanAsia
VIT/7/2011	n/a	cattle	WRLFMD	Vietnam	ME-SA/PanAsia
VIT/12/2011	n/a	water buffalo	WRLFMD	Vietnam	ME-SA/PanAsia
VIT/6/2011	n/a	water buffalo	WRLFMD	Vietnam	ME-SA/PanAsia
VIT/16/2011	n/a	water buffalo	WRLFMD	Vietnam	ME-SA/PanAsia
VIT/5/2011	n/a	cattle	WRLFMD	Vietnam	ME-SA/PanAsia
VIT/15/2010	n/a	cattle	WRLFMD	Vietnam	ME-SA/PanAsia
VIT/22/2010	n/a	cattle	WRLFMD	Vietnam	ME-SA/PanAsia
VIT/10/2010	n/a	cattle	WRLFMD	Vietnam	ME-SA/PanAsia
VIT/1/2011	n/a	water buffalo	WRLFMD	Vietnam	ME-SA/PanAsia
VIT/11/2010	n/a	cattle	WRLFMD	Vietnam	ME-SA/PanAsia
VIT/3/2010	n/a	porcine	WRLFMD	Vietnam	ME-SA/PanAsia
CAM/2/2010	n/a	cattle	WRLFMD	Cambodia	ME-SA/PanAsia
VIT/13/2010	n/a	porcine	WRLFMD	Vietnam	ME-SA/PanAsia
CAM/1/2010	n/a	cattle	WRLFMD	Cambodia	ME-SA/PanAsia
CAM/6/2010	n/a	cattle	WRLFMD	Cambodia	ME-SA/PanAsia
VIT/9/2010	n/a	cattle	WRLFMD	Vietnam	ME-SA/PanAsia
VIT/19/2010	n/a	cattle	WRLFMD	Vietnam	ME-SA/PanAsia
VIT/7/2010	n/a	cattle	WRLFMD	Vietnam	ME-SA/PanAsia
VIT/6/2010	n/a	cattle	WRLFMD	Vietnam	ME-SA/PanAsia
VIT/8/2010	n/a	cattle	WRLFMD	Vietnam	ME-SA/PanAsia
VIT/14/2010	n/a	cattle	WRLFMD	Vietnam	ME-SA/PanAsia
CAM/4/2010	n/a	n/a	WRLFMD	Cambodia	ME-SA/PanAsia
MUR/19/2016	MG972510	cattle	WRLFMD	Mauritius	ME-SA/Ind-2001/e
BHU/3/2009	KM921814	cattle	WRLFMD	Bhutan	ME-SA/Ind-2001/d
UAE/4/2008	KM921876	gazelle	WRLFMD	United Arab Emirates	ME-SA/Ind-2001/c
OMN/7/2001	DQ164941	bovine	WRLFMD	Oman	ME-SA/Ind-2001/b
KUW/3/97	DQ164904	bovine	WRLFMD	Kuwait	ME-SA/Ind-2001/a
IRN/6/2015	MN276044	cattle	WRLFMD	Iran	ME-SA/PanAsia-2/QOM-15
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/264/2009*	n/a	n/a	FMDI-Ankara	Turkey	ME-SA/PanAsia-2/SAN-09
TUR/257/2008*	n/a	n/a	FMDI-Ankara	Turkey	ME-SA/PanAsia-2/TER-08
UKG/35/2001	AJ539141	porcine	PIADC	United Kingdom	ME-SA/PanAsia
TAI/189/87*	KY091288	bovine	TRRL	Thailand	SEA
Manisa/TUR/69*	AY593823	n/a	PIADC	Turkey	ME-SA
ISA/1/62	AJ303500	n/a	WRLFMD	Indonesia	ISA-1

\*, not a WRLFMD Reference Number

n/a, not available