



## FMD Genotyping Report

Lab Reference WRL batch Number: WRLMEG/2022/00007

Sender Details:



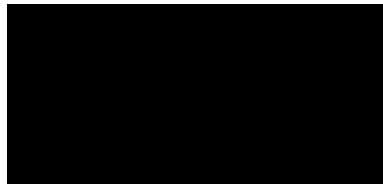
Date Received: 14/02/2022

Country of Origin: KAZAKHSTAN

This report covers a VP1 sequence that was submitted to WRLFMD for analysis. Please note that all our phylogenetic trees can be accessed via the internet at: <http://www.wrlfmd.org/>

Results Approved By:

Official Stamp:



Date:

21/2/22



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

## Genotyping Report

FMDV serotype: O  
Country: Kazakhstan  
Year: 2022  
Batch: WRLMEG/2022/00007  
No. of sequences: 1  
Report date: 14th February 2022  
Report generated by: Nick Knowles  
Report checked by: Don King

This report is prepared on behalf of the Federal Centre for Animal Health (FGBI “ARRIAH”), Russian Federation, and covers a VP1 sequence submitted to the WRLFMD on 14/02/2022.



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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:	KAZ/2022
Sender reference:	O/KAZ/2022
Location of origin:	Kiikty, Shetskiy, Karaghandy
Country of origin:	Kazakhstan
Date of collection:	2022
Host species:	cattle
Serotype:	O
Topotype:	ME-SA
Lineage:	Ind-2001
Sublineage:	e
Sequence length:	633
Ambiguities:	0
Material submitted for sequencing:	n/a
Harvest date of material:	n/a
Primers:	n/a
Received for sequencing:	n/a
Created:	14/02/2022
Last updated:	14/02/2022
VIBASys IDs: sample 50168, genome 50169, sequence viba_50170, sequencing info 50171	

### Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_49986	Orenburg/RUS/2021	cattle	99.4	0	O	ME-SA	Ind-2001	e
viba_48650	MOG/3/2021		98.9	0	O	ME-SA	Ind-2001	e
viba_47397	VIT/11359/2020a	cattle	98.6	0	O	ME-SA	Ind-2001	e
viba_47393	VIT/11272/2020b	porcine	98.6	0	O	ME-SA	Ind-2001	e
viba_48170	VIT/23/2020	cattle	98.6	0	O	ME-SA	Ind-2001	e
viba_48186	VIT/27/2020	cattle	98.6	0	O	ME-SA	Ind-2001	e
viba_48174	VIT/24/2020	cattle	98.4	0	O	ME-SA	Ind-2001	e
viba_48162	VIT/21/2020	water buffalo	98.4	0	O	ME-SA	Ind-2001	e
viba_47295	LAO/4/2020	cattle	98.3	0	O	ME-SA	Ind-2001	e
viba_47316	TAI/4/2020	cattle	98.3	0	O	ME-SA	Ind-2001	e

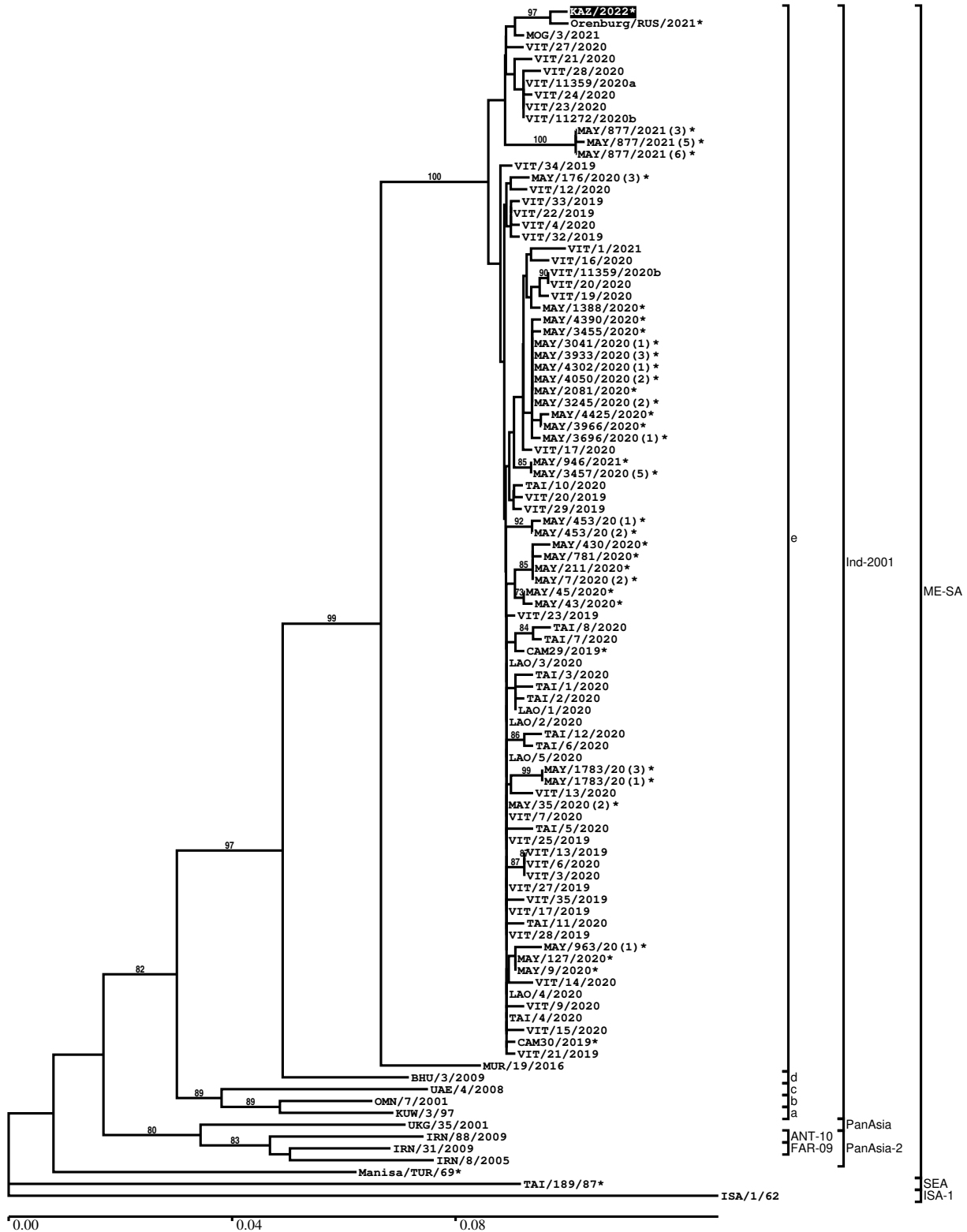
### Most Closely Related Prototype Sequences

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

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_30238	MUR/19/2016	cattle	94.9	0	O	ME-SA	Ind-2001	e
viba_293	BHU/3/2009	cattle	93.2	0	O	ME-SA	Ind-2001	d
viba_541	OMN/7/2001	bovine	90.4	0	O	ME-SA	Ind-2001	b
viba_705	KUW/3/97	bovine	90.1	0	O	ME-SA	Ind-2001	a
viba_397	UAE/4/2008	gazelle	89.3	0	O	ME-SA	Ind-2001	c
viba_766	IRN/31/2009	cattle	88.8	0	O	ME-SA	PanAsia-2	FAR-09
viba_285	UKG/35/2001	porcine	88.8	0	O	ME-SA	PanAsia	
viba_719	IRN/88/2009		88.8	0	O	ME-SA	PanAsia-2	ANT-10
viba_650	IRN/8/2005	ovine	88.3	0	O	ME-SA	PanAsia-2	
viba_359	Manisa/TUR/69		87.7	0	O	ME-SA		

Report on FMDV O in Kazakhstan in 2022

Batch: WRLMEG/2022/00007



\*, not a WRLFMD Reference Number

## Analysis Parameters

VP1 subsequence extractor:	vp1_O
Query sequence set:	WRLMEG/2022/00007-Kazakhstan-O (1 sequences)
Sequence database set:	allseqs_O (5523 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:	10
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
KAZ/2022*	n/a	cattle	ARRIAH	Kazakhstan	ME-SA/Ind-2001/e
Orenburg/RUS/2021*	n/a	cattle	ARRIAH	Russia	ME-SA/Ind-2001/e
MOG/3/2021	n/a	n/a	WRLFMD	Mongolia	ME-SA/Ind-2001/e
VIT/27/2020	n/a	cattle	WRLFMD	Vietnam	ME-SA/Ind-2001/e
VIT/21/2020	n/a	water buffalo	WRLFMD	Vietnam	ME-SA/Ind-2001/e
VIT/28/2020	n/a	cattle	WRLFMD	Vietnam	ME-SA/Ind-2001/e
VIT/11359/2020a	n/a	cattle	RAHO6	Vietnam	ME-SA/Ind-2001/e
VIT/24/2020	n/a	cattle	WRLFMD	Vietnam	ME-SA/Ind-2001/e
VIT/23/2020	n/a	cattle	WRLFMD	Vietnam	ME-SA/Ind-2001/e
VIT/11272/2020b	n/a	porcine	RAHO6	Vietnam	ME-SA/Ind-2001/e
MAY/877/2021(3)*	n/a	cattle	MNFMDL	Malaysia	ME-SA/Ind-2001/e
MAY/877/2021(5)*	n/a	cattle	MNFMDL	Malaysia	ME-SA/Ind-2001/e
MAY/877/2021(6)*	n/a	cattle	MNFMDL	Malaysia	ME-SA/Ind-2001/e
VIT/34/2019	n/a	cattle	WRLFMD	Vietnam	ME-SA/Ind-2001/e
MAY/176/2020(3)*	n/a	cattle	MNFMDL	Malaysia	ME-SA/Ind-2001/e
VIT/12/2020	n/a	cattle	WRLFMD	Vietnam	ME-SA/Ind-2001/e
VIT/33/2019	n/a	cattle	WRLFMD	Vietnam	ME-SA/Ind-2001/e
VIT/22/2019	n/a	cattle	WRLFMD	Vietnam	ME-SA/Ind-2001/e
VIT/4/2020	n/a	cattle	WRLFMD	Vietnam	ME-SA/Ind-2001/e
VIT/32/2019	n/a	cattle	WRLFMD	Vietnam	ME-SA/Ind-2001/e
VIT/1/2021	n/a	cattle	WRLFMD	Vietnam	ME-SA/Ind-2001/e
VIT/16/2020	n/a	water buffalo	WRLFMD	Vietnam	ME-SA/Ind-2001/e
VIT/11359/2020b	n/a	cattle	RAHO6	Vietnam	ME-SA/Ind-2001/e
VIT/20/2020	n/a	porcine	WRLFMD	Vietnam	ME-SA/Ind-2001/e
VIT/19/2020	n/a	n/a	WRLFMD	Vietnam	ME-SA/Ind-2001/e
MAY/1388/2020*	n/a	cattle	MNFMDL	Malaysia	ME-SA/Ind-2001/e
MAY/4390/2020*	n/a	cattle	MNFMDL	Malaysia	ME-SA/Ind-2001/e
MAY/3455/2020*	n/a	cattle	MNFMDL	Malaysia	ME-SA/Ind-2001/e
MAY/3041/2020(1)*	n/a	cattle	MNFMDL	Malaysia	ME-SA/Ind-2001/e
MAY/3933/2020(3)*	n/a	cattle	MNFMDL	Malaysia	ME-SA/Ind-2001/e
MAY/4302/2020(1)*	n/a	cattle	MNFMDL	Malaysia	ME-SA/Ind-2001/e
MAY/4050/2020(2)*	n/a	cattle	MNFMDL	Malaysia	ME-SA/Ind-2001/e
MAY/2081/2020*	n/a	cattle	MNFMDL	Malaysia	ME-SA/Ind-2001/e
MAY/3245/2020(2)*	n/a	cattle	MNFMDL	Malaysia	ME-SA/Ind-2001/e
MAY/4425/2020*	n/a	cattle	MNFMDL	Malaysia	ME-SA/Ind-2001/e
MAY/3966/2020*	n/a	cattle	MNFMDL	Malaysia	ME-SA/Ind-2001/e

*continued on next page*

label	accession	host(s)	lab	country	taxonomic information
MAY/3696/2020(1)*	n/a	cattle	MNFMDL	Malaysia	ME-SA/Ind-2001/e
VIT/17/2020	n/a	cattle	WRLFMD	Vietnam	ME-SA/Ind-2001/e
MAY/946/2021*	n/a	cattle	MNFMDL	Malaysia	ME-SA/Ind-2001/e
MAY/3457/2020(5)*	n/a	cattle	MNFMDL	Malaysia	ME-SA/Ind-2001/e
TAI/10/2020	n/a	cattle	WRLFMD	Thailand	ME-SA/Ind-2001/e
VIT/20/2019	n/a	water buffalo	WRLFMD	Vietnam	ME-SA/Ind-2001/e
VIT/29/2019	n/a	water buffalo	WRLFMD	Vietnam	ME-SA/Ind-2001/e
MAY/453/20(1)*	n/a	cattle	MNFMDL	Malaysia	ME-SA/Ind-2001/e
MAY/453/20(2)*	n/a	cattle	MNFMDL	Malaysia	ME-SA/Ind-2001/e
MAY/430/2020*	n/a	cattle	MNFMDL	Malaysia	ME-SA/Ind-2001/e
MAY/781/2020*	n/a	cattle	MNFMDL	Malaysia	ME-SA/Ind-2001/e
MAY/211/2020*	n/a	cattle	MNFMDL	Malaysia	ME-SA/Ind-2001/e
MAY/7/2020(2)*	n/a	cattle	MNFMDL	Malaysia	ME-SA/Ind-2001/e
MAY/45/2020*	n/a	cattle	MNFMDL	Malaysia	ME-SA/Ind-2001/e
MAY/43/2020*	n/a	cattle	MNFMDL	Malaysia	ME-SA/Ind-2001/e
VIT/23/2019	n/a	water buffalo	WRLFMD	Vietnam	ME-SA/Ind-2001/e
TAI/8/2020	n/a	cattle	WRLFMD	Thailand	ME-SA/Ind-2001/e
TAI/7/2020	n/a	cattle	WRLFMD	Thailand	ME-SA/Ind-2001/e
CAM29/2019*	MZ634455	cattle	APQA	Cambodia	ME-SA/Ind-2001/e
LAO/3/2020	n/a	cattle	WRLFMD	Laos	ME-SA/Ind-2001/e
TAI/3/2020	n/a	cattle	WRLFMD	Thailand	ME-SA/Ind-2001/e
TAI/1/2020	n/a	cattle	WRLFMD	Thailand	ME-SA/Ind-2001/e
TAI/2/2020	n/a	cattle	WRLFMD	Thailand	ME-SA/Ind-2001/e
LAO/1/2020	n/a	cattle	WRLFMD	Laos	ME-SA/Ind-2001/e
LAO/2/2020	n/a	cattle	WRLFMD	Laos	ME-SA/Ind-2001/e
TAI/12/2020	n/a	cattle	WRLFMD	Thailand	ME-SA/Ind-2001/e
TAI/6/2020	n/a	cattle	WRLFMD	Thailand	ME-SA/Ind-2001/e
LAO/5/2020	n/a	cattle	WRLFMD	Laos	ME-SA/Ind-2001/e
MAY/1783/20(3)*	n/a	cattle	MNFMDL	Malaysia	ME-SA/Ind-2001/e
MAY/1783/20(1)*	n/a	cattle	MNFMDL	Malaysia	ME-SA/Ind-2001/e
VIT/13/2020	n/a	cattle	WRLFMD	Vietnam	ME-SA/Ind-2001/e
MAY/35/2020(2)*	n/a	cattle	MNFMDL	Malaysia	ME-SA/Ind-2001/e
VIT/7/2020	n/a	porcine	WRLFMD	Vietnam	ME-SA/Ind-2001/e
TAI/5/2020	n/a	cattle	WRLFMD	Thailand	ME-SA/Ind-2001/e
VIT/25/2019	n/a	porcine	WRLFMD	Vietnam	ME-SA/Ind-2001/e
VIT/13/2019	n/a	porcine	WRLFMD	Vietnam	ME-SA/Ind-2001/e
VIT/6/2020	n/a	cattle	WRLFMD	Vietnam	ME-SA/Ind-2001/e
VIT/3/2020	n/a	cattle	WRLFMD	Vietnam	ME-SA/Ind-2001/e
VIT/27/2019	n/a	cattle	WRLFMD	Vietnam	ME-SA/Ind-2001/e
VIT/35/2019	n/a	cattle	WRLFMD	Vietnam	ME-SA/Ind-2001/e
VIT/17/2019	n/a	porcine	WRLFMD	Vietnam	ME-SA/Ind-2001/e
TAI/11/2020	n/a	cattle	WRLFMD	Thailand	ME-SA/Ind-2001/e
VIT/28/2019	n/a	water buffalo	WRLFMD	Vietnam	ME-SA/Ind-2001/e
MAY/963/20(1)*	n/a	cattle	MNFMDL	Malaysia	ME-SA/Ind-2001/e
MAY/127/2020*	n/a	cattle	MNFMDL	Malaysia	ME-SA/Ind-2001/e
MAY/9/2020*	n/a	cattle	MNFMDL	Malaysia	ME-SA/Ind-2001/e
VIT/14/2020	n/a	cattle	WRLFMD	Vietnam	ME-SA/Ind-2001/e
LAO/4/2020	n/a	cattle	WRLFMD	Laos	ME-SA/Ind-2001/e
VIT/9/2020	n/a	cattle	WRLFMD	Vietnam	ME-SA/Ind-2001/e
TAI/4/2020	n/a	cattle	WRLFMD	Thailand	ME-SA/Ind-2001/e
VIT/15/2020	n/a	cattle	WRLFMD	Vietnam	ME-SA/Ind-2001/e
CAM30/2019*	MZ634456	cattle	APQA	Cambodia	ME-SA/Ind-2001/e
VIT/21/2019	n/a	cattle	WRLFMD	Vietnam	ME-SA/Ind-2001/e
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
UKG/35/2001	AJ539141	porcine	PIADC	United Kingdom	ME-SA/PanAsia
IRN/88/2009	KY091282	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
Manisa/TUR/69*	AY593823	n/a	PIADC	Turkey	ME-SA
TAI/189/87*	KY091288	bovine	TRRL	Thailand	SEA
ISA/1/62	AJ303500	n/a	WRLFMD	Indonesia	ISA-1

\*, not a WRLFMD Reference Number  
n/a, not available