

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

Genotyping Report

FMDV serotype: O
Country: Indonesia
Year: 2022
Batch: WRLFMD/2022/000015
No. of sequences: 3
Report date: 11th July 2022
Report generated by: Nick Knowles
Report checked by: Jemma Wadsworth



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

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Virus sample name:	ISA/1/2022
Sender reference:	VL6
Location of origin:	Lamongan district, East Java province
Country of origin:	Indonesia
Date of collection:	04/05/2022
Host species:	cattle
Serotype:	O
Topotype:	ME-SA
Lineage:	Ind-2001
Sublineage:	e
Sequence length:	633
Ambiguities:	0
Material submitted for sequencing:	10% epi susp
Harvest date of material:	n/a
Primers:	O-1C244F/EUR-2B52R; FMD-3161F/FMD-4303R
Received for sequencing:	04/07/2022
Created:	11/07/2022
Last updated:	11/07/2022
VIBASys IDs: sample 51014, genome 51015, sequence viba_51016, sequencing info 51017	

Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_51020	ISA/3/2022	cattle	100.0	0	O	ME-SA	Ind-2001	e
viba_50631	PVT-S2AN/ISA/2022	cattle	100.0	0	O	ME-SA	Ind-2001	e
viba_50625	PVT-S234/ISA/2022	cattle	100.0	0	O	ME-SA	Ind-2001	e
viba_50504	VL6-J-T/ISA/2022		100.0	0	O	ME-SA	Ind-2001	e
viba_51024	ISA/6/2022	cattle	100.0	0	O	ME-SA	Ind-2001	e
viba_50613	PVT-SP4/ISA/2022	cattle	99.4	0	O	ME-SA	Ind-2001	e
viba_50617	PVT-SP10/ISA/2022	cattle	99.1	0	O	ME-SA	Ind-2001	e
viba_50870	MAY/1577/2021(1)	cattle	96.7	0	O	ME-SA	Ind-2001	e
viba_50874	MAY/1577/2021(6)	cattle	96.7	0	O	ME-SA	Ind-2001	e
viba_50866	MAY/1576/2021(3)	cattle	96.5	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	95.3	0	O	ME-SA	Ind-2001	e
viba_293	BHU/3/2009	cattle	91.9	0	O	ME-SA	Ind-2001	d
viba_541	OMN/7/2001	bovine	91.5	0	O	ME-SA	Ind-2001	b
viba_705	KUW/3/97	bovine	90.5	0	O	ME-SA	Ind-2001	a
viba_397	UAE/4/2008	gazelle	89.3	0	O	ME-SA	Ind-2001	c
viba_650	IRN/8/2005	ovine	88.3	0	O	ME-SA	PanAsia-2	
viba_285	UKG/35/2001	porcine	88.2	0	O	ME-SA	PanAsia	
viba_359	Manisa/TUR/69		87.8	0	O	ME-SA		
viba_666	IRN/18/2010	cattle	87.7	0	O	ME-SA	PanAsia-2	BAL-09
viba_719	IRN/88/2009		87.6	0	O	ME-SA	PanAsia-2	ANT-10

Virus sample name:	ISA/3/2022
Sender reference:	SS37
Location of origin:	Bangka regency, Bangka Belitung Islands
Country of origin:	Indonesia
Date of collection:	06/05/2022
Host species:	cattle
Serotype:	O
Topotype:	ME-SA
Lineage:	Ind-2001
Sublineage:	e
Sequence length:	633
Ambiguities:	0
Material submitted for sequencing:	WRL-LFBK1
Harvest date of material:	22/06/2022
Primers:	O-1C244F/EUR-2B52R; FMD-3161F/FMD-4303R
Received for sequencing:	04/07/2022
Created:	11/07/2022
Last updated:	11/07/2022
VIBASys IDs: sample 51018, genome 51019, sequence viba_51020, sequencing info 51021	

Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_51016	ISA/1/2022	cattle	100.0	0	O	ME-SA	Ind-2001	e
viba_50631	PVT-S2AN/ISA/2022	cattle	100.0	0	O	ME-SA	Ind-2001	e
viba_50625	PVT-S234/ISA/2022	cattle	100.0	0	O	ME-SA	Ind-2001	e
viba_50504	VL6-J-T/ISA/2022		100.0	0	O	ME-SA	Ind-2001	e
viba_51024	ISA/6/2022	cattle	100.0	0	O	ME-SA	Ind-2001	e
viba_50613	PVT-SP4/ISA/2022	cattle	99.4	0	O	ME-SA	Ind-2001	e
viba_50617	PVT-SP10/ISA/2022	cattle	99.1	0	O	ME-SA	Ind-2001	e
viba_50870	MAY/1577/2021(1)	cattle	96.7	0	O	ME-SA	Ind-2001	e
viba_50874	MAY/1577/2021(6)	cattle	96.7	0	O	ME-SA	Ind-2001	e
viba_50866	MAY/1576/2021(3)	cattle	96.5	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	95.3	0	O	ME-SA	Ind-2001	e
viba_293	BHU/3/2009	cattle	91.9	0	O	ME-SA	Ind-2001	d
viba_541	OMN/7/2001	bovine	91.5	0	O	ME-SA	Ind-2001	b
viba_705	KUW/3/97	bovine	90.5	0	O	ME-SA	Ind-2001	a
viba_397	UAE/4/2008	gazelle	89.3	0	O	ME-SA	Ind-2001	c
viba_650	IRN/8/2005	ovine	88.3	0	O	ME-SA	PanAsia-2	
viba_285	UKG/35/2001	porcine	88.2	0	O	ME-SA	PanAsia	
viba_359	Manisa/TUR/69		87.8	0	O	ME-SA		
viba_666	IRN/18/2010	cattle	87.7	0	O	ME-SA	PanAsia-2	BAL-09
viba_719	IRN/88/2009		87.6	0	O	ME-SA	PanAsia-2	ANT-10

Virus sample name:	ISA/6/2022
Sender reference:	PB-26
Location of origin:	Kotawaringin barat district, West Kalimantan province
Country of origin:	Indonesia
Date of collection:	10/05/2022
Host species:	cattle
Serotype:	O
Topotype:	ME-SA
Lineage:	Ind-2001
Sublineage:	e
Sequence length:	633
Ambiguities:	0
Material submitted for sequencing:	10% epi susp
Harvest date of material:	n/a
Primers:	O-1C244F/EUR-2B52R; FMD-3161F/FMD-4303R
Received for sequencing:	04/07/2022
Created:	11/07/2022
Last updated:	11/07/2022
VIBASys IDs: sample 51022, genome 51023, sequence viba_51024, sequencing info 51025	

Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_51020	ISA/3/2022	cattle	100.0	0	O	ME-SA	Ind-2001	e
viba_51016	ISA/1/2022	cattle	100.0	0	O	ME-SA	Ind-2001	e
viba_50631	PVT-S2AN/ISA/2022	cattle	100.0	0	O	ME-SA	Ind-2001	e
viba_50625	PVT-S234/ISA/2022	cattle	100.0	0	O	ME-SA	Ind-2001	e
viba_50504	VL6-J-T/ISA/2022		100.0	0	O	ME-SA	Ind-2001	e
viba_50613	PVT-SP4/ISA/2022	cattle	99.4	0	O	ME-SA	Ind-2001	e
viba_50617	PVT-SP10/ISA/2022	cattle	99.1	0	O	ME-SA	Ind-2001	e
viba_50870	MAY/1577/2021(1)	cattle	96.7	0	O	ME-SA	Ind-2001	e
viba_50874	MAY/1577/2021(6)	cattle	96.7	0	O	ME-SA	Ind-2001	e
viba_50866	MAY/1576/2021(3)	cattle	96.5	0	O	ME-SA	Ind-2001	e

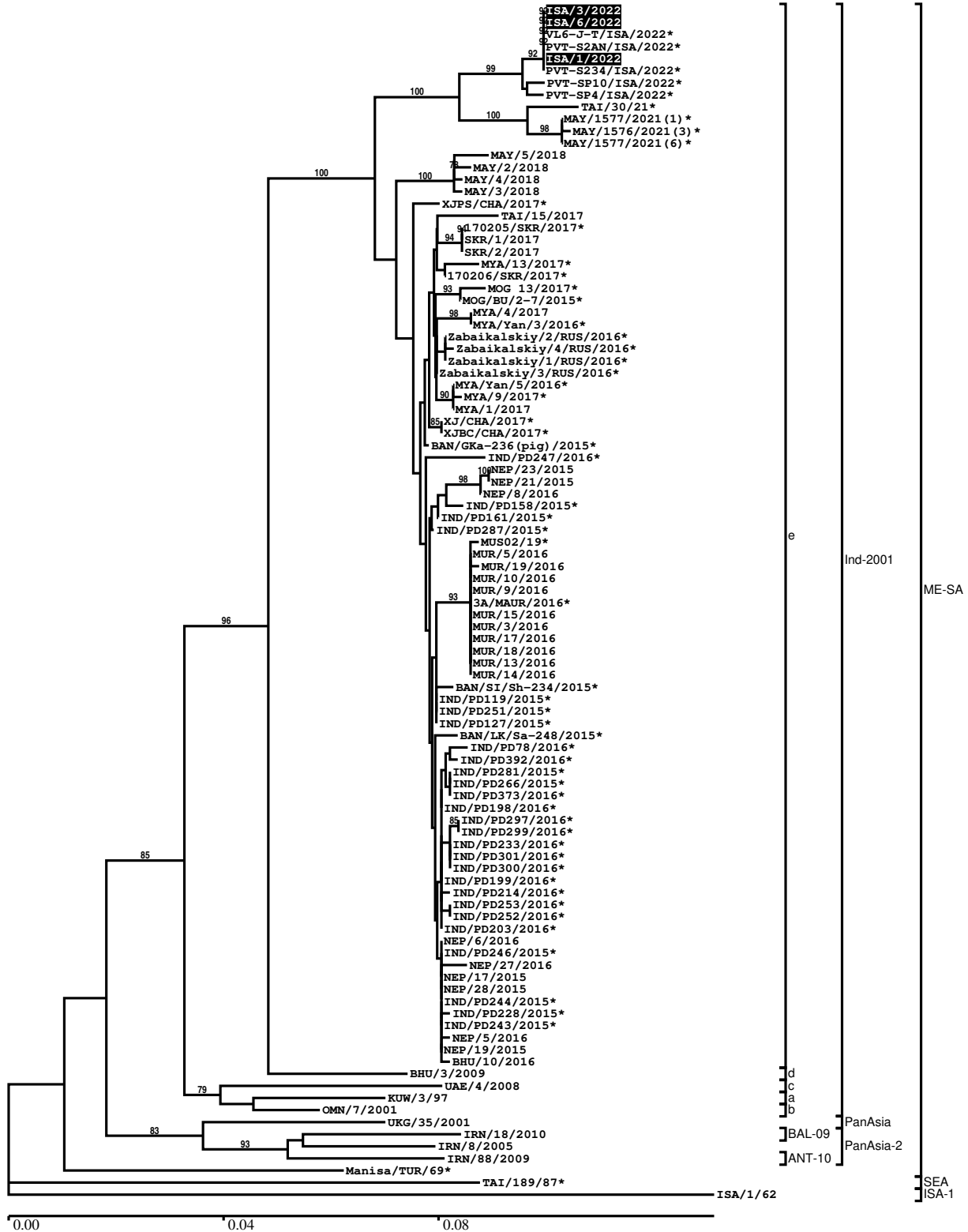
Most Closely Related Prototype Sequences

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	95.3	0	O	ME-SA	Ind-2001	e
viba_293	BHU/3/2009	cattle	91.9	0	O	ME-SA	Ind-2001	d
viba_541	OMN/7/2001	bovine	91.5	0	O	ME-SA	Ind-2001	b
viba_705	KUW/3/97	bovine	90.5	0	O	ME-SA	Ind-2001	a
viba_397	UAE/4/2008	gazelle	89.3	0	O	ME-SA	Ind-2001	c
viba_650	IRN/8/2005	ovine	88.3	0	O	ME-SA	PanAsia-2	
viba_285	UKG/35/2001	porcine	88.2	0	O	ME-SA	PanAsia	
viba_359	Manisa/TUR/69		87.8	0	O	ME-SA		
viba_666	IRN/18/2010	cattle	87.7	0	O	ME-SA	PanAsia-2	BAL-09
viba_719	IRN/88/2009		87.6	0	O	ME-SA	PanAsia-2	ANT-10

Report on FMDV O in Indonesia in 2022

Batch: WRLFMD/2022/00015



*, not a WRLFMD Reference Number

Analysis Parameters

VP1 subsequence extractor:	vp1_O
Query sequence set:	WRLFMD/2022/00015-Indonesia-O (3 sequences)
Sequence database set:	allseqs_O (5636 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
ISA/3/2022	n/a	cattle	WRLFMD	Indonesia	ME-SA/Ind-2001/e
ISA/6/2022	n/a	cattle	WRLFMD	Indonesia	ME-SA/Ind-2001/e
VL6-J-T/ISA/2022*	n/a	n/a	Pusvetma	Indonesia	ME-SA/Ind-2001/e
PVT-S2AN/ISA/2022*	n/a	cattle	Pusvetma	Indonesia	ME-SA/Ind-2001/e
ISA/1/2022	n/a	cattle	WRLFMD	Indonesia	ME-SA/Ind-2001/e
PVT-S234/ISA/2022*	n/a	cattle	Pusvetma	Indonesia	ME-SA/Ind-2001/e
PVT-SP10/ISA/2022*	n/a	cattle	Pusvetma	Indonesia	ME-SA/Ind-2001/e
PVT-SP4/ISA/2022*	n/a	cattle	Pusvetma	Indonesia	ME-SA/Ind-2001/e
TAI/30/21*	n/a	bovine	TRRL	Thailand	ME-SA/Ind-2001/e
MAY/1577/2021(1)*	n/a	cattle	MNFMDL	Malaysia	ME-SA/Ind-2001/e
MAY/1576/2021(3)*	n/a	cattle	MNFMDL	Malaysia	ME-SA/Ind-2001/e
MAY/1577/2021(6)*	n/a	cattle	MNFMDL	Malaysia	ME-SA/Ind-2001/e
MAY/5/2018	n/a	water buffalo	WRLFMD	Malaysia	ME-SA/Ind-2001/e
MAY/2/2018	n/a	cattle	WRLFMD	Malaysia	ME-SA/Ind-2001/e
MAY/4/2018	n/a	cattle	WRLFMD	Malaysia	ME-SA/Ind-2001/e
MAY/3/2018	n/a	cattle	WRLFMD	Malaysia	ME-SA/Ind-2001/e
XJPS/CHA/2017*	KY696707	n/a	LVRI	China	ME-SA/Ind-2001/e
TAI/15/2017	n/a	cattle	WRLFMD	Thailand	ME-SA/Ind-2001/e
170205/SKR/2017*	n/a	cattle	QIA	Republic of Korea (South Korea)	ME-SA/Ind-2001/e
SKR/1/2017	MG972599	cattle	WRLFMD	Republic of Korea (South Korea)	ME-SA/Ind-2001/e
SKR/2/2017	MG972600	cattle	WRLFMD	Republic of Korea (South Korea)	ME-SA/Ind-2001/e
MYA/13/2017*	MG972527	cattle	TRRL	Myanmar	ME-SA/Ind-2001/e
170206/SKR/2017*	n/a	cattle	QIA	Republic of Korea (South Korea)	ME-SA/Ind-2001/e
MOG 13/2017*	n/a	cattle	ARRIAH	Mongolia	ME-SA/Ind-2001/e
MOG/BU/2-7/2015*	LC320038	cattle	NIAH-Japan	Mongolia	ME-SA/Ind-2001/e
MYA/4/2017	MG972519	cattle	WRLFMD	Myanmar	ME-SA/Ind-2001/e
MYA/Yan/3/2016*	LC438822	cattle	NIAH-Japan	Myanmar	ME-SA/Ind-2001/e
Zabaikalskiy/2/RUS/2016*	MG972583	cattle	ARRIAH	Russia	ME-SA/Ind-2001/e
Zabaikalskiy/4/RUS/2016*	MG972585	cattle	ARRIAH	Russia	ME-SA/Ind-2001/e

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label	accession	host(s)	lab	country	taxonomic information
Zabaikalskiy/1/RUS/2016*	MG983720	cattle	ARRIAH	Russia	ME-SA/Ind-2001/e
Zabaikalskiy/3/RUS/2016*	MG972584	cattle	ARRIAH	Russia	ME-SA/Ind-2001/e
MYA/Yan/5/2016*	LC438823	cattle	NIAH-Japan	Myanmar	ME-SA/Ind-2001/e
MYA/9/2017*	MG972523	cattle	TRRL	Myanmar	ME-SA/Ind-2001/e
MYA/1/2017	MG972517	cattle	WRLFMD	Myanmar	ME-SA/Ind-2001/e
XJ/CHA/2017*	MF461724	cattle	LVRI	China	ME-SA/Ind-2001/e
XJBC/CHA/2017*	KY696708	n/a	LVRI	China	ME-SA/Ind-2001/e
BAN/GKa-236(pig)/2015*	KX712091	porcine	Univ Dhaka	Bangladesh	ME-SA/Ind-2001/e
IND/PD247/2016*	MT909679	cattle	PD-FMD	India	ME-SA/Ind-2001/e
NEP/23/2015	MG972550	cattle	WRLFMD	Nepal	ME-SA/Ind-2001/e
NEP/21/2015	MG972549	cattle	WRLFMD	Nepal	ME-SA/Ind-2001/e
NEP/8/2016	MG972556	cattle	WRLFMD	Nepal	ME-SA/Ind-2001/e
IND/PD158/2015*	MT909634	cattle	PD-FMD	India	ME-SA/Ind-2001/e
IND/PD161/2015*	MT909637	cattle	PD-FMD	India	ME-SA/Ind-2001/e
IND/PD287/2015*	MT909659	cattle	PD-FMD	India	ME-SA/Ind-2001/e
MUS02/19*	n/a	bovine	BVI	Mauritius	ME-SA/Ind-2001/e
MUR/5/2016	MG972497	cattle	WRLFMD	Mauritius	ME-SA/Ind-2001/e
MUR/19/2016	MG972510	cattle	WRLFMD	Mauritius	ME-SA/Ind-2001/e
MUR/10/2016	MG972502	cattle	WRLFMD	Mauritius	ME-SA/Ind-2001/e
MUR/9/2016	MG972501	cattle	WRLFMD	Mauritius	ME-SA/Ind-2001/e
3A/MAUR/2016*	n/a	bovine	ANSES	Mauritius	ME-SA/Ind-2001/e
MUR/15/2016	MG972506	cattle	WRLFMD	Mauritius	ME-SA/Ind-2001/e
MUR/3/2016	MG972495	cattle	WRLFMD	Mauritius	ME-SA/Ind-2001/e
MUR/17/2016	MG972508	cattle	WRLFMD	Mauritius	ME-SA/Ind-2001/e
MUR/18/2016	MG972509	cattle	WRLFMD	Mauritius	ME-SA/Ind-2001/e
MUR/13/2016	MG972504	cattle	WRLFMD	Mauritius	ME-SA/Ind-2001/e
MUR/14/2016	MG972505	cattle	WRLFMD	Mauritius	ME-SA/Ind-2001/e
BAN/SI/Sh-234/2015*	KY077610	cattle	Univ Dhaka	Bangladesh	ME-SA/Ind-2001/e
IND/PD119/2015*	MT909624	cattle	PD-FMD	India	ME-SA/Ind-2001/e
IND/PD251/2015*	MT909652	cattle	PD-FMD	India	ME-SA/Ind-2001/e
IND/PD127/2015*	MT909627	cattle	PD-FMD	India	ME-SA/Ind-2001/e
BAN/LK/Sa-248/2015*	KY077612	cattle	Univ Dhaka	Bangladesh	ME-SA/Ind-2001/e
IND/PD78/2016*	MT909668	water buffalo	PD-FMD	India	ME-SA/Ind-2001/e
IND/PD392/2016*	MT909703	cattle	PD-FMD	India	ME-SA/Ind-2001/e
IND/PD281/2015*	MT909658	cattle	PD-FMD	India	ME-SA/Ind-2001/e
IND/PD266/2015*	MT909655	cattle	PD-FMD	India	ME-SA/Ind-2001/e
IND/PD373/2016*	MT909702	cattle	PD-FMD	India	ME-SA/Ind-2001/e
IND/PD198/2016*	MT909672	cattle	PD-FMD	India	ME-SA/Ind-2001/e
IND/PD297/2016*	MT909685	cattle	PD-FMD	India	ME-SA/Ind-2001/e
IND/PD299/2016*	MT909686	cattle	PD-FMD	India	ME-SA/Ind-2001/e
IND/PD233/2016*	MT909676	cattle	PD-FMD	India	ME-SA/Ind-2001/e
IND/PD301/2016*	MT909688	cattle	PD-FMD	India	ME-SA/Ind-2001/e
IND/PD300/2016*	MT909687	cattle	PD-FMD	India	ME-SA/Ind-2001/e
IND/PD199/2016*	MT909673	cattle	PD-FMD	India	ME-SA/Ind-2001/e
IND/PD214/2016*	MT909675	cattle	PD-FMD	India	ME-SA/Ind-2001/e
IND/PD253/2016*	MT909681	cattle	PD-FMD	India	ME-SA/Ind-2001/e
IND/PD252/2016*	MT909680	cattle	PD-FMD	India	ME-SA/Ind-2001/e
IND/PD203/2016*	MT909674	cattle	PD-FMD	India	ME-SA/Ind-2001/e
NEP/6/2016	KY449054	cattle	WRLFMD	Nepal	ME-SA/Ind-2001/e
IND/PD246/2015*	MT909650	cattle	PD-FMD	India	ME-SA/Ind-2001/e
NEP/27/2016	MG972569	cattle	WRLFMD	Nepal	ME-SA/Ind-2001/e
NEP/17/2015	KY449050	cattle	WRLFMD	Nepal	ME-SA/Ind-2001/e
NEP/28/2015	KY449052	cattle	WRLFMD	Nepal	ME-SA/Ind-2001/e
IND/PD244/2015*	MT909649	cattle	PD-FMD	India	ME-SA/Ind-2001/e
IND/PD228/2015*	MT909646	cattle	PD-FMD	India	ME-SA/Ind-2001/e
IND/PD243/2015*	MT909648	cattle	PD-FMD	India	ME-SA/Ind-2001/e
NEP/5/2016	KY449053	cattle	WRLFMD	Nepal	ME-SA/Ind-2001/e
NEP/19/2015	KY449051	cattle	WRLFMD	Nepal	ME-SA/Ind-2001/e
BHU/10/2016	MG972484	cattle	WRLFMD	Bhutan	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
KUW/3/97	DQ164904	bovine	WRLFMD	Kuwait	ME-SA/Ind-2001/a
OMN/7/2001	DQ164941	bovine	WRLFMD	Oman	ME-SA/Ind-2001/b
UKG/35/2001	AJ539141	porcine	PIADC	United Kingdom	ME-SA/PanAsia
IRN/18/2010	KY091283	cattle	WRLFMD	Iran	ME-SA/PanAsia-2/BAL-09

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label	accession	host(s)	lab	country	taxonomic information
IRN/8/2005	KY091281	ovine	WRLFMD	Iran	ME-SA/PanAsia-2
IRN/88/2009	KY091282	n/a	WRLFMD	Iran	ME-SA/PanAsia-2/ANT-10
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