

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

Genotyping Report

FMDV serotype: A
Country: India
Year: 2020
Batch: WRLMEG/2022/00041
No. of sequences: 1
Report date: 10th November 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:	VMC/Mizoram/IND/1/2020
Sender reference:	VMC/Mizoram/1/2020
Location of origin:	Mizoram
Country of origin:	India
Date of collection:	12/05/2020
Host species:	cattle
Serotype:	A
Topotype:	ASIA
Lineage:	G-VII
Sublineage:	
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:	10/11/2022
Last updated:	10/11/2022
VIBASys IDs: sample 52015, genome 52016, sequence viba_52017, sequencing info 52018	

Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_49043	NEP/5/2021	bovine	92.4	0	A	ASIA	G-VII	
viba_843	SAU/16/95		91.0	0	A	ASIA	G-VII	
viba_27447	IND/417/2007	cattle	90.9	0	A	ASIA	G-VII	
viba_5571	BHU/42/2003		90.7	0	A	ASIA	G-VII	
viba_5559	BHU/27/2003	cattle	90.7	0	A	ASIA	G-VII	
viba_27443	IND/413/2007	cattle	90.6	0	A	ASIA	G-VII	
viba_5555	BHU/8/2003		90.5	0	A	ASIA	G-VII	
viba_5523	BHU/41/2002	bovine	90.5	0	A	ASIA	G-VII	
viba_5543	BHU/4/2003		90.4	0	A	ASIA	G-VII	
viba_5547	BHU/6/2003		90.4	0	A	ASIA	G-VII	

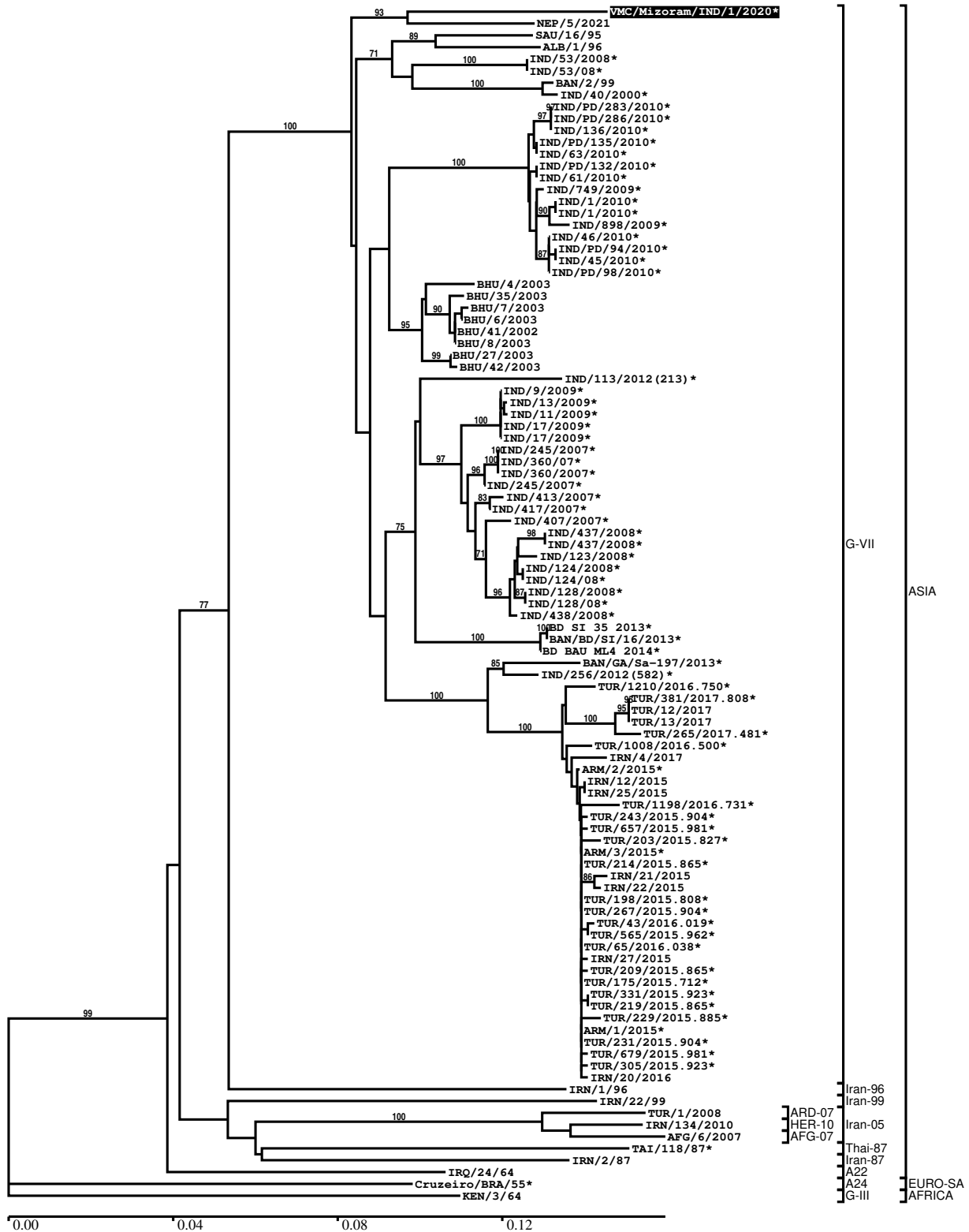
Most Closely Related Prototype Sequences

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

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_843	SAU/16/95		91.0	0	A	ASIA	G-VII	
viba_864	IND/40/2000	cattle	89.0	0	A	ASIA	G-VII	
viba_677	IRQ/24/64	bovine	85.7	0	A	ASIA	A22	
viba_336	IRN/1/96	bovine	84.6	1	A	ASIA	Iran-96	
viba_682	IRN/2/87	bovine	83.2	0	A	ASIA	Iran-87	
viba_414	AFG/6/2007	bovine	83.2	0	A	ASIA	Iran-05	AFG-07
viba_13615	IRN/134/2010	cattle	82.9	0	A	ASIA	Iran-05	HER-10
viba_403	TUR/1/2008	cattle	82.7	0	A	ASIA	Iran-05	ARD-07
viba_475	IRN/22/99		82.7	0	A	ASIA	Iran-99	
viba_630	TAI/118/87		82.6	0	A	ASIA	Thai-87	

Report on FMDV A in India in 2020

Batch: WRLMEG/2022/00041



*, not a WRLFMD Reference Number

Analysis Parameters

VP1 subsequence extractor:	vp1_A
Query sequence set:	WRLMEG/2022/00041-India-A (1 sequences)
Sequence database set:	allseqs_A (2362 sequences)
Prototype sequence set:	!prototypes_A (40 sequences)
Number of related sequences reported:	10
Minimal VP1 subsequence match length	600
Sequence alignment method:	muscle (default parameters)
Sequence alignment length:	633
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/A

label	accession	host(s)	lab	country	taxonomic information
VMC/Mizoram/IND/1/2020*	OL419371	cattle	CAU	India	ASIA/G-VII
NEP/5/2021	n/a	bovine	WRLFMD	Nepal	ASIA/G-VII
SAU/16/95	EU553874	n/a	WRLFMD	Saudi Arabia	ASIA/G-VII
ALB/1/96	EU553850	n/a	WRLFMD	Albania	ASIA/G-VII
IND/53/2008*	HQ127709	cattle	PD-FMD	India	ASIA/G-VII
IND/53/08*	FJ617241	bovine	PD-FMD	India	ASIA/G-VII
BAN/2/99	n/a	n/a	WRLFMD	Bangladesh	ASIA/G-VII
IND/40/2000*	AF390646	cattle	PD-FMD	India	ASIA/G-VII
IND/PD/283/2010*	HQ127731	cattle	PD-FMD	India	ASIA/G-VII
IND/PD/286/2010*	HQ127732	cattle	PD-FMD	India	ASIA/G-VII
IND/136/2010*	HQ666878	cattle	PD-FMD	India	ASIA/G-VII
IND/PD/135/2010*	HQ127730	cattle	PD-FMD	India	ASIA/G-VII
IND/63/2010*	HQ666887	cattle	PD-FMD	India	ASIA/G-VII
IND/PD/132/2010*	HQ127729	cattle	PD-FMD	India	ASIA/G-VII
IND/61/2010*	HQ666881	cattle	PD-FMD	India	ASIA/G-VII
IND/749/2009*	HQ127724	cattle	PD-FMD	India	ASIA/G-VII
IND/1/2010*	HQ127726	cattle	PD-FMD	India	ASIA/G-VII
IND/1/2010*	HQ666886	cattle	PD-FMD	India	ASIA/G-VII
IND/898/2009*	HQ127725	cattle	PD-FMD	India	ASIA/G-VII
IND/46/2010*	HQ666879	cattle	PD-FMD	India	ASIA/G-VII
IND/PD/94/2010*	HQ127727	cattle	PD-FMD	India	ASIA/G-VII
IND/45/2010*	HQ666880	cattle	PD-FMD	India	ASIA/G-VII
IND/PD/98/2010*	HQ127728	cattle	PD-FMD	India	ASIA/G-VII
BHU/4/2003	n/a	n/a	WRLFMD	Bhutan	ASIA/G-VII
BHU/35/2003	n/a	n/a	WRLFMD	Bhutan	ASIA/G-VII
BHU/7/2003	FJ755012	cattle	WRLFMD	Bhutan	ASIA/G-VII
BHU/6/2003	n/a	n/a	WRLFMD	Bhutan	ASIA/G-VII
BHU/41/2002	EU414525	bovine	WRLFMD	Bhutan	ASIA/G-VII
BHU/8/2003	n/a	n/a	WRLFMD	Bhutan	ASIA/G-VII
BHU/27/2003	FJ755013	cattle	WRLFMD	Bhutan	ASIA/G-VII
BHU/42/2003	n/a	n/a	WRLFMD	Bhutan	ASIA/G-VII
IND/113/2012(213)*	n/a	n/a	PD-FMD	India	ASIA/G-VII
IND/9/2009*	HQ127716	cattle	PD-FMD	India	ASIA/G-VII
IND/13/2009*	HQ127718	cattle	PD-FMD	India	ASIA/G-VII
IND/11/2009*	HQ127717	cattle	PD-FMD	India	ASIA/G-VII
IND/17/2009*	HQ127719	cattle	PD-FMD	India	ASIA/G-VII

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label	accession	host(s)	lab	country	taxonomic information
IND/17/2009*	HQ832592	cattle	PD-FMD	India	ASIA/G-VII
IND/245/2007*	HQ832590	cattle	PD-FMD	India	ASIA/G-VII
IND/360/07*	FJ617243	bovine	PD-FMD	India	ASIA/G-VII
IND/360/2007*	HQ127705	cattle	PD-FMD	India	ASIA/G-VII
IND/245/2007*	HQ127704	cattle	PD-FMD	India	ASIA/G-VII
IND/413/2007*	HQ127707	cattle	PD-FMD	India	ASIA/G-VII
IND/417/2007*	HQ127708	cattle	PD-FMD	India	ASIA/G-VII
IND/407/2007*	HQ127706	cattle	PD-FMD	India	ASIA/G-VII
IND/437/2008*	HQ832591	cattle	PD-FMD	India	ASIA/G-VII
IND/437/2008*	HQ127714	cattle	PD-FMD	India	ASIA/G-VII
IND/123/2008*	HQ127710	cattle	PD-FMD	India	ASIA/G-VII
IND/124/2008*	HQ127711	cattle	PD-FMD	India	ASIA/G-VII
IND/124/08*	FJ617244	bovine	PD-FMD	India	ASIA/G-VII
IND/128/2008*	HQ127712	cattle	PD-FMD	India	ASIA/G-VII
IND/128/08*	FJ617246	bovine	PD-FMD	India	ASIA/G-VII
IND/438/2008*	HQ127715	cattle	PD-FMD	India	ASIA/G-VII
BD SI 35 2013*	KU684494	cattle	BAU	Bangladesh	ASIA/G-VII
BAN/BD/SI/16/2013*	KR869773	cattle	University of Dhaka	Bangladesh	ASIA/G-VII
BD BAU ML4 2014*	KT982205	cattle	BAU	Bangladesh	ASIA/G-VII
BAN/GA/Sa-197/2013*	KJ754939	cattle	University of Dhaka	Bangladesh	ASIA/G-VII
IND/256/2012(582)*	n/a	n/a	PD-FMD	India	ASIA/G-VII
TUR/1210/2016.750*	KY982330	cattle	FMDI	Turkey	ASIA/G-VII
TUR/381/2017.808*	MT681217	cattle	FMDI	Turkey	ASIA/G-VII
TUR/12/2017	n/a	cattle	WRLFMD	Turkey	ASIA/G-VII
TUR/13/2017	n/a	cattle	WRLFMD	Turkey	ASIA/G-VII
TUR/265/2017.481*	n/a	n/a	FMDI	Turkey	ASIA/G-VII
TUR/1008/2016.500*	KY982328	cattle	FMDI	Turkey	ASIA/G-VII
IRN/4/2017	n/a	cattle	WRLFMD	Iran	ASIA/G-VII
ARM/2/2015*	KY982280	cattle	ARRIAH	Armenia	ASIA/G-VII
IRN/12/2015	KY982283	cattle	WRLFMD	Iran	ASIA/G-VII
IRN/25/2015	KY982290	cattle	WRLFMD	Iran	ASIA/G-VII
TUR/1198/2016.731*	MT681218	cattle	FMDI	Turkey	ASIA/G-VII
TUR/243/2015.904*	MT681220	cattle	FMDI	Turkey	ASIA/G-VII
TUR/657/2015.981*	MT681228	cattle	FMDI	Turkey	ASIA/G-VII
TUR/203/2015.827*	KY982323	cattle	FMDI	Turkey	ASIA/G-VII
ARM/3/2015*	KY982281	cattle	ARRIAH	Armenia	ASIA/G-VII
TUR/214/2015.865*	MT681219	cattle	FMDI	Turkey	ASIA/G-VII
IRN/21/2015	KY982288	cattle	WRLFMD	Iran	ASIA/G-VII
IRN/22/2015	KY982289	cattle	WRLFMD	Iran	ASIA/G-VII
TUR/198/2015.808*	KY982322	cattle	FMDI	Turkey	ASIA/G-VII
TUR/267/2015.904*	MT681226	cattle	FMDI	Turkey	ASIA/G-VII
TUR/43/2016.019*	MT681213	cattle	FMDI	Turkey	ASIA/G-VII
TUR/565/2015.962*	MT681214	cattle	FMDI	Turkey	ASIA/G-VII
TUR/65/2016.038*	MT681223	cattle	FMDI	Turkey	ASIA/G-VII
IRN/27/2015	KY982291	cattle	WRLFMD	Iran	ASIA/G-VII
TUR/209/2015.865*	MT681212	cattle	FMDI	Turkey	ASIA/G-VII
TUR/175/2015.712*	KY982321	cattle	FMDI	Turkey	ASIA/G-VII
TUR/331/2015.923*	KY982326	cattle	FMDI	Turkey	ASIA/G-VII
TUR/219/2015.865*	KY982324	cattle	FMDI	Turkey	ASIA/G-VII
TUR/229/2015.885*	MT681225	cattle	FMDI	Turkey	ASIA/G-VII
ARM/1/2015*	KY982279	cattle	ARRIAH	Armenia	ASIA/G-VII
TUR/231/2015.904*	MT681229	cattle	FMDI	Turkey	ASIA/G-VII
TUR/679/2015.981*	MT681211	cattle	FMDI	Turkey	ASIA/G-VII
TUR/305/2015.923*	KY982325	cattle	FMDI	Turkey	ASIA/G-VII
IRN/20/2016	KY982296	cattle	WRLFMD	Iran	ASIA/G-VII
IRN/1/96	EF208771	bovine	WRLFMD	Iran	ASIA/Iran-96
IRN/22/99	EF208772	n/a	WRLFMD	Iran	ASIA/Iran-99
TUR/1/2008	FJ755133	cattle	WRLFMD	Turkey	ASIA/Iran-05/ARD-07
IRN/134/2010	n/a	cattle	WRLFMD	Iran	ASIA/Iran-05/HER-10
AFG/6/2007	FJ755007	bovine	WRLFMD	Afghanistan	ASIA/Iran-05/AFG-07
TAI/118/87*	EF208777	n/a	WRLFMD	Thailand	ASIA/Thai-87
IRN/2/87	EF208770	bovine	WRLFMD	Iran	ASIA/Iran-87
IRQ/24/64	AY593763	bovine	PIADC	Iraq	ASIA/A22
Cruzeiro/BRA/55*	AY593768	bovine	PIADC	Brazil	EURO-SA/A24
KEN/3/64	AY593761	n/a	PIADC	Kenya	AFRICA/G-III

*, not a WRLFMD Reference Number

n/a, not available