



FMD Genotyping Report

Lab Reference WRL batch Number: WRLFMD/2024/000003

Sender Details:

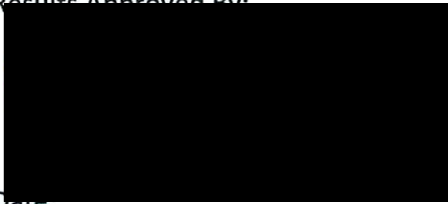


Date Received: 17/01/2024

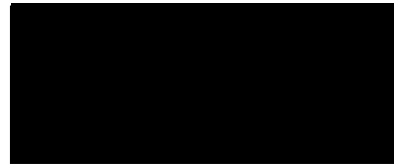
Country of Origin*: Tunisia

Work has now been completed in respect of the sequences recently submitted and the details are as attached. Please note that all our phylogenetic trees can be accessed via the internet at:
<http://www.wrlfmd.org/>

Results Approved By:



Official Stamp:



Date:

4/3/24

To help us improve the quality of our service, please send any suggestions or requests to the Reference Laboratory by email (reflabsfeedback@pirbright.ac.uk).

* Data supplied by the customer

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

Genotyping Report

FMDV serotype: O
Country: Tunisia
Year: 2023
Batch: WRLFMD/2024/000003
No. of sequences: 3
Report date: 28th January 2024
Report generated by: Nick Knowles
Report checked by: Jemma Wadsworth



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

email: reporting@pirbright.ac.uk

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Virus sample name:	TUN/1/2023
Sender reference:	O/EA-3/TUN/23z014983/2023/240109i
Location of origin:	Nabeul
Country of origin:	Tunisia
Date of collection:	03/12/2023
Host species:	cattle
Serotype:	O
Topotype:	EA-3
Lineage:	
Sublineage:	
Sequence length:	633
Ambiguities:	0
Material submitted for sequencing:	WRL-LFBK1
Harvest date of material:	19/01/2024
Primers:	O-1C244F/EUR-2B52R; FMD-3161F/FMD-4303R
Received for sequencing:	25/01/2024
Created:	28/01/2024
Last updated:	28/01/2024

VIBASys IDs: sample 54929, genome 54930, sequence viba_54931, sequencing info 54932

Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_53274	TUN/5946/2023	cattle	99.1	0	O	EA-3		
viba_54935	TUN/2/2023	cattle	98.1	0	O	EA-3		
viba_54389	NIG/13/2023	cattle	97.9	0	O	EA-3		
viba_54381	NIG/9/2023	cattle	97.9	0	O	EA-3		
viba_54357	NIG/3/2023	cattle	97.9	0	O	EA-3		
viba_54385	NIG/12/2023	cattle	97.9	0	O	EA-3		
viba_54353	NIG/2/2023	cattle	97.9	0	O	EA-3		
viba_54939	TUN/3/2023	cattle	97.9	0	O	EA-3		
viba_54373	NIG/7/2023	cattle	97.8	0	O	EA-3		
viba_54369	NIG/6/2023	cattle	97.8	0	O	EA-3		

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_116	SUD/2/86	bovine	86.1	0	O	EA-3		
viba_1893	K40/84	bovine	84.1	0	O	EA-1		
viba_854	ETH/1/2007	cattle	84.1	0	O	EA-3		
viba_408	ETH/3/2004	cattle	84.0	0	O	EA-3		
viba_50	UGA/17/98		83.7	0	O	EA-4		
viba_860	IRN/6/2015	cattle	83.7	0	O	ME-SA	PanAsia-2	QOM-15
viba_354	PAK/16/2010	cattle	83.4	0	O	ME-SA	PanAsia-2	PUN-10
viba_27877	SRL/2/97	bovine	83.3	0	O	ME-SA	Srl-97	
viba_30238	MUR/19/2016	cattle	83.1	0	O	ME-SA	Ind-2001	e
viba_850	NEP/1/2015	cattle	82.8	1	O	ME-SA	PanAsia-2	KAT-15

Virus sample name:	TUN/2/2023
Sender reference:	O/EA-3/TUN/23z014986/2023/240109i
Location of origin:	Monastir
Country of origin:	Tunisia
Date of collection:	03/12/2023
Host species:	cattle
Serotype:	O
Topotype:	EA-3
Lineage:	
Sublineage:	
Sequence length:	633
Ambiguities:	0
Material submitted for sequencing:	WRL-LFBK1
Harvest date of material:	19/01/2024
Primers:	O-1C244F/EUR-2B52R; FMD-3161F/FMD-4303R
Received for sequencing:	25/01/2024
Created:	28/01/2024
Last updated:	28/01/2024

VIBASys IDs: sample 54933, genome 54934, sequence viba_54935, sequencing info 54936

Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_54389	NIG/13/2023	cattle	99.8	0	O	EA-3		
viba_54381	NIG/9/2023	cattle	99.8	0	O	EA-3		
viba_54357	NIG/3/2023	cattle	99.8	0	O	EA-3		
viba_54385	NIG/12/2023	cattle	99.8	0	O	EA-3		
viba_54353	NIG/2/2023	cattle	99.8	0	O	EA-3		
viba_54939	TUN/3/2023	cattle	99.8	0	O	EA-3		
viba_54373	NIG/7/2023	cattle	99.7	0	O	EA-3		
viba_54369	NIG/6/2023	cattle	99.7	0	O	EA-3		
viba_54361	NIG/4/2023	cattle	99.7	0	O	EA-3		
viba_54365	NIG/5/2023	cattle	99.5	0	O	EA-3		

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_116	SUD/2/86	bovine	86.8	0	O	EA-3		
viba_408	ETH/3/2004	cattle	85.2	0	O	EA-3		
viba_854	ETH/1/2007	cattle	84.9	0	O	EA-3		
viba_50	UGA/17/98		84.5	0	O	EA-4		
viba_860	IRN/6/2015	cattle	84.5	0	O	ME-SA	PanAsia-2	QOM-15
viba_1893	K40/84	bovine	84.3	0	O	EA-1		
viba_38517	LAO/1/87	water buffalo	84.0	0	O	SEA	Tai-87	
viba_30238	MUR/19/2016	cattle	84.0	0	O	ME-SA	Ind-2001	e
viba_354	PAK/16/2010	cattle	83.8	0	O	ME-SA	PanAsia-2	PUN-10
viba_27877	SRL/2/97	bovine	83.8	0	O	ME-SA	Srl-97	

Virus sample name:	TUN/3/2023
Sender reference:	O/EA-3/TUN/23z014991/2023/240109i
Location of origin:	Tozeur
Country of origin:	Tunisia
Date of collection:	03/12/2023
Host species:	cattle
Serotype:	O
Topotype:	EA-3
Lineage:	
Sublineage:	
Sequence length:	633
Ambiguities:	0
Material submitted for sequencing:	WRL-LFBK1
Harvest date of material:	19/01/2024
Primers:	O-1C244F/EUR-2B52R; FMD-3161F/FMD-4303R
Received for sequencing:	25/01/2024
Created:	28/01/2024
Last updated:	28/01/2024
VIBASys IDs: sample 54937, genome 54938, sequence viba_54939, sequencing info 54940	

Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_54935	TUN/2/2023	cattle	99.8	0	O	EA-3		
viba_54389	NIG/13/2023	cattle	99.7	0	O	EA-3		
viba_54381	NIG/9/2023	cattle	99.7	0	O	EA-3		
viba_54357	NIG/3/2023	cattle	99.7	0	O	EA-3		
viba_54385	NIG/12/2023	cattle	99.7	0	O	EA-3		
viba_54353	NIG/2/2023	cattle	99.7	0	O	EA-3		
viba_54373	NIG/7/2023	cattle	99.5	0	O	EA-3		
viba_54369	NIG/6/2023	cattle	99.5	0	O	EA-3		
viba_54361	NIG/4/2023	cattle	99.5	0	O	EA-3		
viba_54365	NIG/5/2023	cattle	99.4	0	O	EA-3		

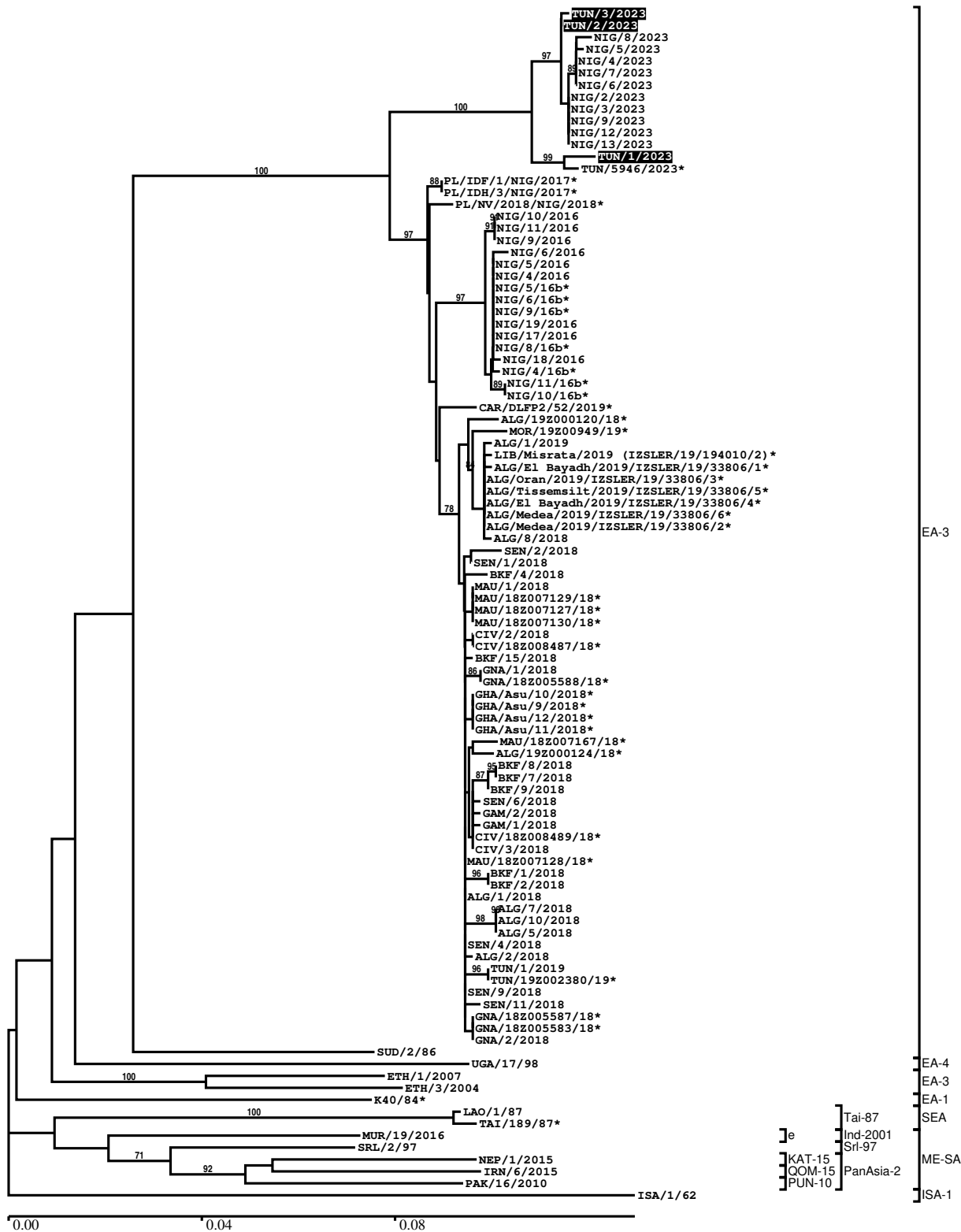
Most Closely Related Prototype Sequences

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

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_116	SUD/2/86	bovine	86.6	0	O	EA-3		
viba_408	ETH/3/2004	cattle	85.0	0	O	EA-3		
viba_854	ETH/1/2007	cattle	85.0	0	O	EA-3		
viba_860	IRN/6/2015	cattle	84.6	0	O	ME-SA	PanAsia-2	QOM-15
viba_50	UGA/17/98		84.3	0	O	EA-4		
viba_38517	LAO/1/87	water buffalo	84.2	0	O	SEA	Tai-87	
viba_1893	K40/84	bovine	84.1	0	O	EA-1		
viba_30238	MUR/19/2016	cattle	84.1	0	O	ME-SA	Ind-2001	e
viba_354	PAK/16/2010	cattle	84.0	0	O	ME-SA	PanAsia-2	PUN-10
viba_27877	SRL/2/97	bovine	83.9	0	O	ME-SA	Srl-97	

Report on FMDV O in Tunisia in 2023

Batch: WRLFMD/2024/000003



*, not a WRLFMD Reference Number

Analysis Parameters

VP1 subsequence extractor:	vp1_O
Query sequence set:	WRLFMD/2024/000003-Tunisia-O (3 sequences)
Sequence database set:	allseqs_O (6178 sequences)
Prototype sequence set:	!prototypes_O (58 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:	11
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
TUN/3/2023	n/a	cattle	WRLFMD	Tunisia	EA-3
TUN/2/2023	n/a	cattle	WRLFMD	Tunisia	EA-3
NIG/8/2023	n/a	cattle	WRLFMD	Nigeria	EA-3
NIG/5/2023	n/a	cattle	WRLFMD	Nigeria	EA-3
NIG/4/2023	n/a	cattle	WRLFMD	Nigeria	EA-3
NIG/7/2023	n/a	cattle	WRLFMD	Nigeria	EA-3
NIG/6/2023	n/a	cattle	WRLFMD	Nigeria	EA-3
NIG/2/2023	n/a	cattle	WRLFMD	Nigeria	EA-3
NIG/3/2023	n/a	cattle	WRLFMD	Nigeria	EA-3
NIG/9/2023	n/a	cattle	WRLFMD	Nigeria	EA-3
NIG/12/2023	n/a	cattle	WRLFMD	Nigeria	EA-3
NIG/13/2023	n/a	cattle	WRLFMD	Nigeria	EA-3
TUN/1/2023	n/a	cattle	WRLFMD	Tunisia	EA-3
TUN/5946/2023*	n/a	cattle	ANSES	Tunisia	EA-3
PL/IDF/1/NIG/2017*	n/a	bovine	CFIA/NVRI	Nigeria	EA-3
PL/IDH/3/NIG/2017*	n/a	bovine	CFIA/NVRI	Nigeria	EA-3
PL/NV/2018/NIG/2018*	n/a	bovine	CFIA/NVRI	Nigeria	EA-3
NIG/10/2016	n/a	cattle	WRLFMD	Nigeria	EA-3
NIG/11/2016	n/a	cattle	WRLFMD	Nigeria	EA-3
NIG/9/2016	n/a	cattle	WRLFMD	Nigeria	EA-3
NIG/6/2016	n/a	cattle	WRLFMD	Nigeria	EA-3
NIG/5/2016	n/a	cattle	WRLFMD	Nigeria	EA-3
NIG/4/2016	n/a	cattle	WRLFMD	Nigeria	EA-3
NIG/5/16b*	MH894425	cattle	PIADC	Nigeria	EA-3
NIG/6/16b*	MH894426	cattle	PIADC	Nigeria	EA-3
NIG/9/16b*	MH894429	cattle	PIADC	Nigeria	EA-3
NIG/19/2016	n/a	cattle	WRLFMD	Nigeria	EA-3
NIG/17/2016	n/a	cattle	WRLFMD	Nigeria	EA-3
NIG/8/16b*	MH894428	cattle	PIADC	Nigeria	EA-3
NIG/18/2016	n/a	cattle	WRLFMD	Nigeria	EA-3
NIG/4/16b*	MH894424	cattle	PIADC	Nigeria	EA-3
NIG/11/16b*	MH894431	cattle	PIADC	Nigeria	EA-3
NIG/10/16b*	MH894430	cattle	PIADC	Nigeria	EA-3
CAR/DLFP2/52/2019*	n/a	environmental	WRLFMD	Cameroon	EA-3
ALG/19Z000120/18*	n/a	ovine	ANSES	Algeria	EA-3
MOR/19Z00949/19*	n/a	bovine	ANSES	Morocco	EA-3

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label	accession	host(s)	lab	country	taxonomic information
ALG/1/2019	n/a	cattle	WRLFMD	Algeria	EA-3
LIB/Misrata/2019 (IZSLER/19/194010/2)*	n/a	cattle	IZSLER	Libya	EA-3
ALG/EI Bayadh/2019/IZSLER/19/33806/1*	n/a	bovine	IZSLER	Algeria	EA-3
ALG/Oran/2019/IZSLER/19/33806/3*	n/a	ovine	IZSLER	Algeria	EA-3
ALG/Tissemsilt/2019/IZSLER/19/33806/5*	n/a	ovine	IZSLER	Algeria	EA-3
ALG/EI Bayadh/2019/IZSLER/19/33806/4*	n/a	bovine	IZSLER	Algeria	EA-3
ALG/Medea/2019/IZSLER/19/33806/6*	n/a	bovine	IZSLER	Algeria	EA-3
ALG/Medea/2019/IZSLER/19/33806/2*	n/a	bovine	IZSLER	Algeria	EA-3
ALG/8/2018	n/a	cattle	WRLFMD	Algeria	EA-3
SEN/2/2018	n/a	porcine	WRLFMD	Senegal	EA-3
SEN/1/2018	n/a	cattle	WRLFMD	Senegal	EA-3
BKF/4/2018	n/a	cattle	WRLFMD	Burkina Faso	EA-3
MAU/1/2018	n/a	cattle	WRLFMD	Mauritania	EA-3
MAU/18Z007129/18*	n/a	n/a	ANSES	Mauritania	EA-3
MAU/18Z007127/18*	n/a	n/a	ANSES	Mauritania	EA-3
MAU/18Z007130/18*	n/a	n/a	ANSES	Mauritania	EA-3
CIV/2/2018	n/a	porcine	WRLFMD	Cote d'Ivoire	EA-3
CIV/18Z008487/18*	n/a	porcine	ANSES	Cote d'Ivoire	EA-3
BKF/15/2018	n/a	cattle	WRLFMD	Burkina Faso	EA-3
GNA/1/2018	n/a	cattle	WRLFMD	Guinea	EA-3
GNA/18Z005588/18*	n/a	n/a	ANSES	Guinea	EA-3
GHA/Asu/10/2018*	LC456871	cattle	NIAH-JAPAN	Ghana	EA-3
GHA/Asu/9/2018*	LC456870	cattle	NIAH-JAPAN	Ghana	EA-3
GHA/Asu/12/2018*	LC456873	cattle	NIAH-JAPAN	Ghana	EA-3
GHA/Asu/11/2018*	LC456872	cattle	NIAH-JAPAN	Ghana	EA-3
MAU/18Z007167/18*	n/a	n/a	ANSES	Mauritania	EA-3
ALG/19Z000124/18*	n/a	caprine	ANSES	Algeria	EA-3
BKF/8/2018	n/a	cattle	WRLFMD	Burkina Faso	EA-3
BKF/7/2018	n/a	cattle	WRLFMD	Burkina Faso	EA-3
BKF/9/2018	n/a	cattle	WRLFMD	Burkina Faso	EA-3
SEN/6/2018	n/a	cattle	WRLFMD	Senegal	EA-3
GAM/2/2018	n/a	cattle	WRLFMD	Gambia	EA-3
GAM/1/2018	n/a	cattle	WRLFMD	Gambia	EA-3
CIV/18Z008489/18*	n/a	porcine	ANSES	Cote d'Ivoire	EA-3
CIV/3/2018	n/a	porcine	WRLFMD	Cote d'Ivoire	EA-3
MAU/18Z007128/18*	n/a	n/a	ANSES	Mauritania	EA-3
BKF/1/2018	n/a	cattle	WRLFMD	Burkina Faso	EA-3
BKF/2/2018	n/a	cattle	WRLFMD	Burkina Faso	EA-3
ALG/1/2018	n/a	cattle	WRLFMD	Algeria	EA-3
ALG/7/2018	n/a	cattle	WRLFMD	Algeria	EA-3
ALG/10/2018	n/a	sheep	WRLFMD	Algeria	EA-3
ALG/5/2018	n/a	cattle	WRLFMD	Algeria	EA-3
SEN/4/2018	n/a	cattle	WRLFMD	Senegal	EA-3
ALG/2/2018	n/a	cattle	WRLFMD	Algeria	EA-3
TUN/1/2019	n/a	cattle	WRLFMD	Tunisia	EA-3
TUN/19Z002380/19*	n/a	bovine	ANSES	Tunisia	EA-3
SEN/9/2018	n/a	cattle	WRLFMD	Senegal	EA-3
SEN/11/2018	n/a	cattle	WRLFMD	Senegal	EA-3
GNA/18Z005587/18*	n/a	n/a	ANSES	Guinea	EA-3
GNA/18Z005583/18*	n/a	n/a	ANSES	Guinea	EA-3
GNA/2/2018	n/a	cattle	WRLFMD	Guinea	EA-3
SUD/2/86	DQ165075	bovine	WRLFMD	Sudan	EA-3

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label	accession	host(s)	lab	country	taxonomic information
UGA/17/98	HM211075	n/a	WRLFMD	Uganda	EA-4
ETH/1/2007	FJ798137	cattle	WRLFMD	Ethiopia	EA-3
ETH/3/2004	FJ798109	cattle	WRLFMD	Ethiopia	EA-3
K40/84*	KY091280	bovine	WRLFMD	Kenya	EA-1
LAO/1/87	MK390898	water buffalo	WRLFMD	Laos	SEA/Tai-87
TAI/189/87*	KY091288	bovine	TRRL	Thailand	SEA/Tai-87
MUR/19/2016	MG972510	cattle	WRLFMD	Mauritius	ME-SA/Ind-2001/e
SRL/2/97	AJ303531	bovine	WRLFMD	Sri Lanka	ME-SA/Sri-97
NEP/1/2015	MN276045	cattle	WRLFMD	Nepal	ME-SA/PanAsia-2/KAT-15
IRN/6/2015	MN276044	cattle	WRLFMD	Iran	ME-SA/PanAsia-2/QOM-15
PAK/16/2010	KY091285	cattle	WRLFMD	Pakistan	ME-SA/PanAsia-2/PUN-10
ISA/1/62	AJ303500	n/a	WRLFMD	Indonesia	ISA-1

*, not a WRLFMD Reference Number

n/a, not available