

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

## Genotyping Report

FMDV serotype: O  
Country: Guinea  
Year: 2018  
Batch: WRLMEG/2018/00035  
No. of sequences: 4  
Report date: 8th September 2018  
Report generated by: Nick Knowles  
Report checked by: Kasia Bankowska

This report is prepared on behalf of ANSES (Paris, France) and covers a VP1 sequence submitted to the WRLFMD on 08/09/2018.



**anses**  
agence nationale de sécurité sanitaire  
alimentation, environnement, travail



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Virus sample name:	GNA/18Z005582/18
Sender reference:	O_GNA_18Z005582_18
Location of origin:	n/a
Country of origin:	Guinea
Date of collection:	01/07/2018
Host species:	
Serotype:	O
Topotype:	EA-3
Lineage:	
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:	09/09/2018
Last updated:	09/09/2018
VIBASys IDs: sample 37246, genome 37247, sequence viba_37248, sequencing info 37249	

#### Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_36938	ALG/1/2018	cattle	99.4	0	O	EA-3		
viba_36947	ALG/2/2018	cattle	99.2	0	O	EA-3		
viba_31009	NIG/17/2016	cattle	97.6	0	O	EA-3		
viba_30981	NIG/10/2016	cattle	97.6	0	O	EA-3		
viba_30985	NIG/11/2016	cattle	97.6	0	O	EA-3		
viba_31017	NIG/19/2016	cattle	97.6	0	O	EA-3		
viba_30965	NIG/5/2016	cattle	97.6	0	O	EA-3		
viba_30977	NIG/9/2016	cattle	97.6	0	O	EA-3		
viba_30961	NIG/4/2016	cattle	97.6	0	O	EA-3		
viba_30973	NIG/7/2016	sheep	97.5	0	O	EA-3		

#### Most Closely Related Prototype Sequences

see [http://www.wrlfmd.org/fmd\\_genotyping/prototypes.htm](http://www.wrlfmd.org/fmd_genotyping/prototypes.htm)

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_116	SUD/2/86	bovine	88.5	0	O	EA-3		
viba_854	ETH/1/2007	cattle	85.6	0	O	EA-3		
viba_408	ETH/3/2004	cattle	85.2	0	O	EA-3		
viba_50	UGA/17/98		84.8	0	O	EA-4		
viba_285	UKG/35/2001	porcine	84.1	0	O	ME-SA	PanAsia	
viba_85	UGA/3/2002		84.0	0	O	EA-2		
viba_576	IND/R2/75		83.9	0	O	ME-SA		
viba_104	GHA/5/93	bovine	83.9	0	O	WA		
viba_541	OMN/7/2001	bovine	83.9	0	O	ME-SA	Ind-2001	b
viba_359	Manisa/TUR/69		83.8	0	O	ME-SA		

Virus sample name:	GNA/18Z005583/18
Sender reference:	O_GNA_18Z005583_18
Location of origin:	n/a
Country of origin:	Guinea
Date of collection:	01/07/2018
Host species:	
Serotype:	O
Topotype:	EA-3
Lineage:	
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:	09/09/2018
Last updated:	09/09/2018
VIBASys IDs: sample 37250, genome 37251, sequence viba_37252, sequencing info 37253	

#### Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_36938	ALG/1/2018	cattle	99.8	0	O	EA-3		
viba_36947	ALG/2/2018	cattle	99.7	0	O	EA-3		
viba_31009	NIG/17/2016	cattle	98.1	0	O	EA-3		
viba_30981	NIG/10/2016	cattle	98.1	0	O	EA-3		
viba_30985	NIG/11/2016	cattle	98.1	0	O	EA-3		
viba_31017	NIG/19/2016	cattle	98.1	0	O	EA-3		
viba_30965	NIG/5/2016	cattle	98.1	0	O	EA-3		
viba_30977	NIG/9/2016	cattle	98.1	0	O	EA-3		
viba_30961	NIG/4/2016	cattle	98.1	0	O	EA-3		
viba_30973	NIG/7/2016	sheep	97.9	0	O	EA-3		

#### Most Closely Related Prototype Sequences

see [http://www.wrlfmd.org/fmd\\_genotyping/prototypes.htm](http://www.wrlfmd.org/fmd_genotyping/prototypes.htm)

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_116	SUD/2/86	bovine	89.0	0	O	EA-3		
viba_854	ETH/1/2007	cattle	85.8	0	O	EA-3		
viba_408	ETH/3/2004	cattle	85.6	0	O	EA-3		
viba_50	UGA/17/98		85.1	0	O	EA-4		
viba_285	UKG/35/2001	porcine	84.3	0	O	ME-SA	PanAsia	
viba_104	GHA/5/93	bovine	84.2	0	O	WA		
viba_85	UGA/3/2002		84.2	0	O	EA-2		
viba_523	K83/79		83.9	0	O	EA-1		
viba_576	IND/R2/75		83.9	0	O	ME-SA		
viba_359	Manisa/TUR/69		83.8	0	O	ME-SA		

Virus sample name:	GNA/18Z005587/18
Sender reference:	O_GNA_18Z005587_18
Location of origin:	n/a
Country of origin:	Guinea
Date of collection:	01/07/2018
Host species:	
Serotype:	O
Topotype:	EA-3
Lineage:	
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:	09/09/2018
Last updated:	09/09/2018
VIBASys IDs: sample 37254, genome 37255, sequence viba_37256, sequencing info 37257	

#### Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_36938	ALG/1/2018	cattle	99.8	0	O	EA-3		
viba_36947	ALG/2/2018	cattle	99.7	0	O	EA-3		
viba_31009	NIG/17/2016	cattle	98.1	0	O	EA-3		
viba_30981	NIG/10/2016	cattle	98.1	0	O	EA-3		
viba_30985	NIG/11/2016	cattle	98.1	0	O	EA-3		
viba_31017	NIG/19/2016	cattle	98.1	0	O	EA-3		
viba_30965	NIG/5/2016	cattle	98.1	0	O	EA-3		
viba_30977	NIG/9/2016	cattle	98.1	0	O	EA-3		
viba_30961	NIG/4/2016	cattle	98.1	0	O	EA-3		
viba_30973	NIG/7/2016	sheep	97.9	0	O	EA-3		

#### Most Closely Related Prototype Sequences

see [http://www.wrlfmd.org/fmd\\_genotyping/prototypes.htm](http://www.wrlfmd.org/fmd_genotyping/prototypes.htm)

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_116	SUD/2/86	bovine	89.0	0	O	EA-3		
viba_854	ETH/1/2007	cattle	85.8	0	O	EA-3		
viba_408	ETH/3/2004	cattle	85.6	0	O	EA-3		
viba_50	UGA/17/98		85.1	0	O	EA-4		
viba_285	UKG/35/2001	porcine	84.3	0	O	ME-SA	PanAsia	
viba_104	GHA/5/93	bovine	84.2	0	O	WA		
viba_85	UGA/3/2002		84.2	0	O	EA-2		
viba_523	K83/79		83.9	0	O	EA-1		
viba_576	IND/R2/75		83.9	0	O	ME-SA		
viba_359	Manisa/TUR/69		83.8	0	O	ME-SA		

Virus sample name:	GNA/18Z005588/18
Sender reference:	O_GNA_18Z005588_18
Location of origin:	n/a
Country of origin:	Guinea
Date of collection:	01/07/2018
Host species:	
Serotype:	O
Topotype:	EA-3
Lineage:	
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:	09/09/2018
Last updated:	09/09/2018
VIBASys IDs: sample 37258, genome 37259, sequence viba_37260, sequencing info 37261	

#### Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_36938	ALG/1/2018	cattle	99.7	0	O	EA-3		
viba_36947	ALG/2/2018	cattle	99.5	0	O	EA-3		
viba_31009	NIG/17/2016	cattle	97.9	0	O	EA-3		
viba_30981	NIG/10/2016	cattle	97.9	0	O	EA-3		
viba_30985	NIG/11/2016	cattle	97.9	0	O	EA-3		
viba_31017	NIG/19/2016	cattle	97.9	0	O	EA-3		
viba_30965	NIG/5/2016	cattle	97.9	0	O	EA-3		
viba_30977	NIG/9/2016	cattle	97.9	0	O	EA-3		
viba_30961	NIG/4/2016	cattle	97.9	0	O	EA-3		
viba_30973	NIG/7/2016	sheep	97.8	0	O	EA-3		

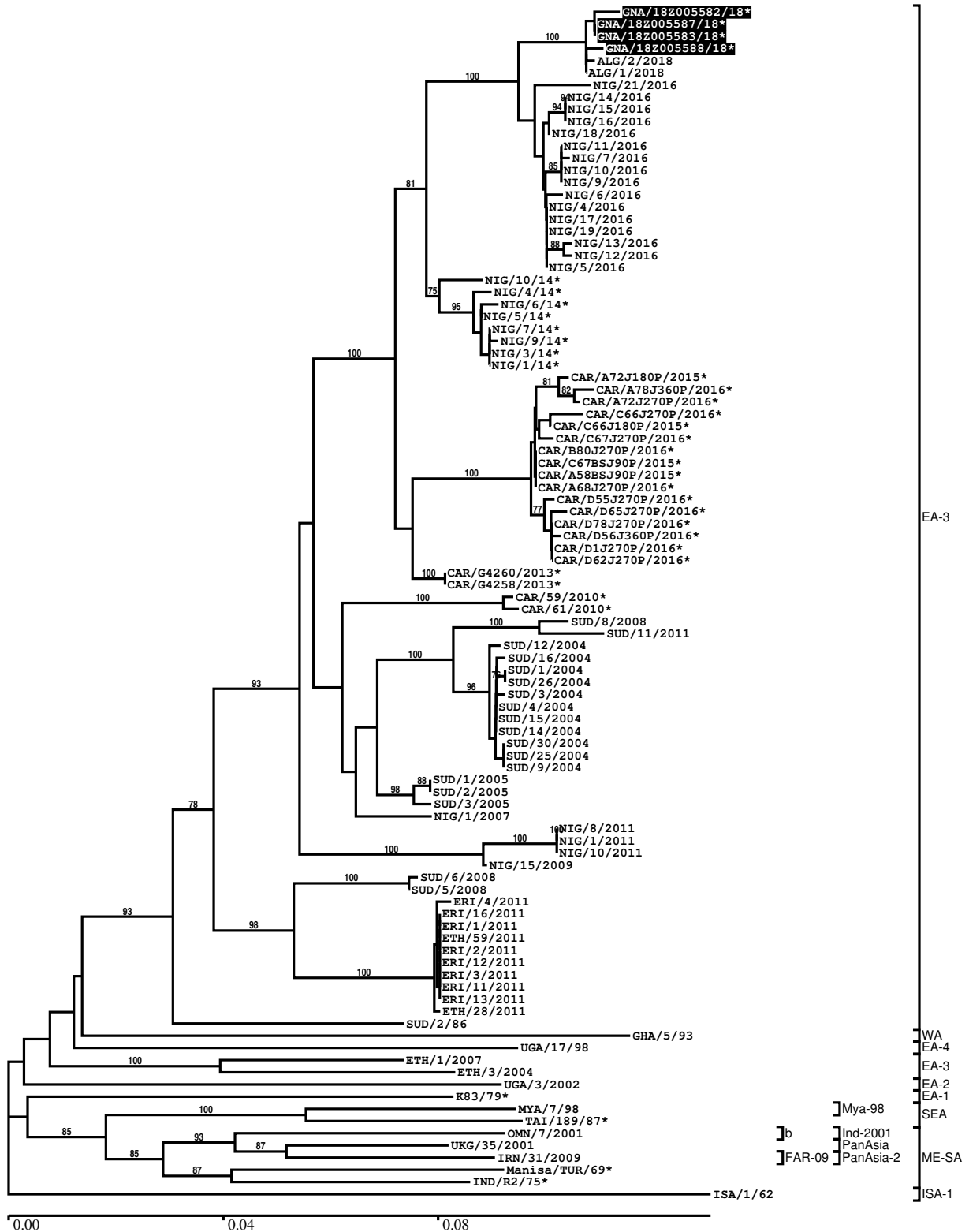
#### Most Closely Related Prototype Sequences

see [http://www.wrlfmd.org/fmd\\_genotyping/prototypes.htm](http://www.wrlfmd.org/fmd_genotyping/prototypes.htm)

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_116	SUD/2/86	bovine	89.3	0	O	EA-3		
viba_854	ETH/1/2007	cattle	85.8	0	O	EA-3		
viba_408	ETH/3/2004	cattle	85.6	0	O	EA-3		
viba_50	UGA/17/98		85.1	0	O	EA-4		
viba_285	UKG/35/2001	porcine	84.3	0	O	ME-SA	PanAsia	
viba_523	K83/79		84.2	0	O	EA-1		
viba_576	IND/R2/75		84.2	0	O	ME-SA		
viba_85	UGA/3/2002		84.2	0	O	EA-2		
viba_766	IRN/31/2009	cattle	84.1	0	O	ME-SA	PanAsia-2	FAR-09
viba_199	MYA/7/98	bovine	83.9	0	O	SEA	Mya-98	

Report on FMDV O in Guinea in 2018

Batch: WRLMEG/2018/00035



\*, not a WRLFMD Reference Number

## Analysis Parameters

VP1 subsequence extractor:	vp1_O
Query sequence set:	WRLMEG/2018/00035-Guinea-O (4 sequences)
Sequence database set:	allseqs_O (3848 sequences)
Prototype sequence set:	!prototypes_O (48 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:	13
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
GNA/18Z005582/18*	n/a	n/a	ANSES	Guinea	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/18Z005588/18*	n/a	n/a	ANSES	Guinea	EA-3
ALG/2/2018	n/a	cattle	WRLFMD	Algeria	EA-3
ALG/1/2018	n/a	cattle	WRLFMD	Algeria	EA-3
NIG/21/2016	n/a	cattle	WRLFMD	Nigeria	EA-3
NIG/14/2016	n/a	cattle	WRLFMD	Nigeria	EA-3
NIG/15/2016	n/a	cattle	WRLFMD	Nigeria	EA-3
NIG/16/2016	n/a	cattle	WRLFMD	Nigeria	EA-3
NIG/18/2016	n/a	cattle	WRLFMD	Nigeria	EA-3
NIG/11/2016	n/a	cattle	WRLFMD	Nigeria	EA-3
NIG/7/2016	n/a	sheep	WRLFMD	Nigeria	EA-3
NIG/10/2016	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/4/2016	n/a	cattle	WRLFMD	Nigeria	EA-3
NIG/17/2016	n/a	cattle	WRLFMD	Nigeria	EA-3
NIG/19/2016	n/a	cattle	WRLFMD	Nigeria	EA-3
NIG/13/2016	n/a	cattle	WRLFMD	Nigeria	EA-3
NIG/12/2016	n/a	cattle	WRLFMD	Nigeria	EA-3
NIG/5/2016	n/a	cattle	WRLFMD	Nigeria	EA-3
NIG/10/14*	KY041874	bovine	CODA-CERVA	Nigeria	EA-3
NIG/4/14*	KY065153	bovine	CODA-CERVA	Nigeria	EA-3
NIG/6/14*	KY065155	bovine	CODA-CERVA	Nigeria	EA-3
NIG/5/14*	KY065154	bovine	CODA-CERVA	Nigeria	EA-3
NIG/7/14*	KY065151	bovine	CODA-CERVA	Nigeria	EA-3
NIG/9/14*	KY065152	bovine	CODA-CERVA	Nigeria	EA-3
NIG/3/14*	KY065150	bovine	CODA-CERVA	Nigeria	EA-3
NIG/1/14*	KY041876	bovine	CODA-CERVA	Nigeria	EA-3
CAR/A72J180P/2015*	MG873210	cattle	PIADC	Cameroon	EA-3
CAR/A78J360P/2016*	MG873212	cattle	PIADC	Cameroon	EA-3
CAR/A72J270P/2016*	MG873211	cattle	PIADC	Cameroon	EA-3
CAR/C66J270P/2016*	MG873215	cattle	PIADC	Cameroon	EA-3
CAR/C66J180P/2015*	MG873214	cattle	PIADC	Cameroon	EA-3
CAR/C67J270P/2016*	MG873217	cattle	PIADC	Cameroon	EA-3

*continued on next page*

label	accession	host(s)	lab	country	taxonomic information
CAR/B80J270P/2016*	MG873213	cattle	PIADC	Cameroon	EA-3
CAR/C67BSJ90P/2015*	MG873216	cattle	PIADC	Cameroon	EA-3
CAR/A58BSJ90P/2015*	MG873208	cattle	PIADC	Cameroon	EA-3
CAR/A68J270P/2016*	MG873209	cattle	PIADC	Cameroon	EA-3
CAR/D55J270P/2016*	MG873219	cattle	PIADC	Cameroon	EA-3
CAR/D65J270P/2016*	MG873222	cattle	PIADC	Cameroon	EA-3
CAR/D78J270P/2016*	MG873223	cattle	PIADC	Cameroon	EA-3
CAR/D56J360P/2016*	MG873220	cattle	PIADC	Cameroon	EA-3
CAR/D1J270P/2016*	MG873218	cattle	PIADC	Cameroon	EA-3
CAR/D62J270P/2016*	MG873221	cattle	PIADC	Cameroon	EA-3
CAR/G4260/2013*	KY581679	n/a	PIADC	Cameroon	EA-3
CAR/G4258/2013*	KY581680	n/a	PIADC	Cameroon	EA-3
CAR/59/2010*	KU720572	cattle	PIADC	Cameroon	EA-3
CAR/61/2010*	KU720573	cattle	PIADC	Cameroon	EA-3
SUD/8/2008	GU566063	cattle	WRLFMD	Sudan	EA-3
SUD/11/2011	KX258036	cattle	WRLFMD	Sudan	EA-3
SUD/12/2004	GU566049	bovine	WRLFMD	Sudan	EA-3
SUD/16/2004	GU566052	bovine	WRLFMD	Sudan	EA-3
SUD/1/2004	GU566045	bovine	WRLFMD	Sudan	EA-3
SUD/26/2004	GU566054	bovine	WRLFMD	Sudan	EA-3
SUD/3/2004	GU566046	bovine	WRLFMD	Sudan	EA-3
SUD/4/2004	GU566047	bovine	WRLFMD	Sudan	EA-3
SUD/15/2004	GU566051	bovine	WRLFMD	Sudan	EA-3
SUD/14/2004	GU566050	bovine	WRLFMD	Sudan	EA-3
SUD/30/2004	GU566055	bovine	WRLFMD	Sudan	EA-3
SUD/25/2004	GU566053	bovine	WRLFMD	Sudan	EA-3
SUD/9/2004	GU566048	bovine	WRLFMD	Sudan	EA-3
SUD/1/2005	GU566056	cattle	WRLFMD	Sudan	EA-3
SUD/2/2005	GU566057	cattle	WRLFMD	Sudan	EA-3
SUD/3/2005	GU566058	cattle	WRLFMD	Sudan	EA-3
NIG/1/2007	KX258020	cattle	WRLFMD	Nigeria	EA-3
NIG/8/2011	KX258024	bovine	WRLFMD	Nigeria	EA-3
NIG/1/2011	KX258022	bovine	WRLFMD	Nigeria	EA-3
NIG/10/2011	KX258025	bovine	WRLFMD	Nigeria	EA-3
NIG/15/2009	KX258021	cattle	WRLFMD	Nigeria	EA-3
SUD/6/2008	GU566062	cattle	WRLFMD	Sudan	EA-3
SUD/5/2008	GU566061	cattle	WRLFMD	Sudan	EA-3
ERI/4/2011	n/a	cattle	WRLFMD	Eritrea	EA-3
ERI/16/2011	n/a	porcine	WRLFMD	Eritrea	EA-3
ERI/1/2011	n/a	cattle	WRLFMD	Eritrea	EA-3
ETH/59/2011	n/a	cattle	WRLFMD	Ethiopia	EA-3
ERI/2/2011	n/a	cattle	WRLFMD	Eritrea	EA-3
ERI/12/2011	n/a	porcine	WRLFMD	Eritrea	EA-3
ERI/3/2011	n/a	cattle	WRLFMD	Eritrea	EA-3
ERI/11/2011	n/a	porcine	WRLFMD	Eritrea	EA-3
ERI/13/2011	n/a	porcine	WRLFMD	Eritrea	EA-3
ETH/28/2011	n/a	cattle	WRLFMD	Ethiopia	EA-3
SUD/2/86	DQ165075	bovine	WRLFMD	Sudan	EA-3
GHA/5/93	AJ303488	bovine	WRLFMD	Ghana	WA
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
UGA/3/2002	DQ165077	n/a	WRLFMD	Uganda	EA-2
K83/79*	AJ303511	n/a	WRLFMD	Kenya	EA-1
MYA/7/98	DQ164925	bovine	WRLFMD	Myanmar	SEA/Mya-98
TAI/189/87*	KY091288	bovine	TRRL	Thailand	SEA
OMN/7/2001	DQ164941	bovine	WRLFMD	Oman	ME-SA/Ind-2001/b
UKG/35/2001	AJ539141	porcine	PIADC	United Kingdom	ME-SA/PanAsia
IRN/31/2009	KY091284	cattle	WRLFMD	Iran	ME-SA/PanAsia-2/FAR-09
Manisa/TUR/69*	AY593823	n/a	PIADC	Turkey	ME-SA
IND/R2/75*	AF204276	n/a	PD-FMD	India	ME-SA
ISA/1/62	AJ303500	n/a	WRLFMD	Indonesia	ISA-1

\*, not a WRLFMD Reference Number

n/a, not available