



FMD Genotyping Report

Lab Reference WRL batch Number: WRLFMD/2025/000016

Sender Details:



Date Received: 11/09/2025

Country of Origin*: Ethiopia

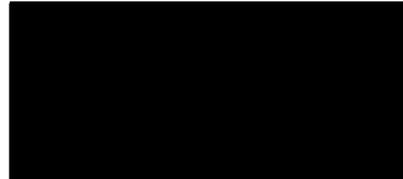
Work has now been completed in respect of the samples recently submitted and the details are as attached.

Please note that all our phylogenetic trees can be accessed via the internet at: <http://www.wrlfmd.org/>

Results:



Official Stamp:

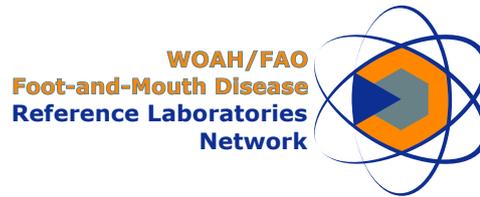


Date:

10/11/25

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)

FMDV Genotyping Report

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Citation: WRLFMD. 2025. FMDV Genotyping Report [WRLFMD/2025/000016]. (Accessed 06/11/25)

FMDV serotype: A

Country: Ethiopia

Year: 2024-2025

Batch: WRLFMD/2025/000016

No. of sequences: 2

Reported date: 06 November 2025

WRLFMD Website: <https://www.wrlfmd.org/>

Email: reporting@pirbright.ac.uk

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FMDtype is supported through funding from

Virus sample: ETH/39/2024

Sample details

Reception Date:	2025-09-11
Sender reference:	1956
Location of origin:	3, Arsi Negalle, Arsi, Oromia
Country of origin:	Ethiopia
Date of collection:	2024-11-03
Host species:	cattle

Genotyping details

Serotype:	A
Topotype:	AFRICA
Lineage:	G-IV
Sublineage:	None

Sequencing details

Material submitted for sequencing:	WRL-LFBK2
Material Harvest Date:	2025-10-08
Sequence length:	633
Ambiguities:	0

Most Closely Related FMDV Isolates

Sequence ID	Virus Name	Host	% Id	#Ambig.	Serotype	Topotype	Lineage	Sublineage
FMDV VP1 Sequences								
296503	ETH/13/2020	Bovine	96.05	0	A	AFRICA	G-IV	None
296504	ETH/14/2020	Bovine	96.05	0	A	AFRICA	G-IV	None
296498	ETH/25/2019	Bovine	94.63	0	A	AFRICA	G-IV	None
296500	ETH/34/2019	Bovine	94.63	0	A	AFRICA	G-IV	None
855519	Egypt_1SD	Cattle	93.56	0	A	None	None	None
855520	Egypt_2SD	Cattle	93.56	0	A	None	None	None
296478	EGY/7/2020	Water Buffalo	93.36	0	A	AFRICA	G-IV	None
296479	EGY/9/2020	Cattle	93.36	0	A	AFRICA	G-IV	None
854757	Egy/AHRI-RV39/2020/VP1	Cattle	93.36	0	A	None	None	None
296477	EGY/2/2020	Cattle	93.21	0	A	AFRICA	G-IV	None
FMDV VP1 Prototype Sequences*								
296629	SUD/1/2021	Cattle	95.42	0	A	AFRICA	G-IV	None
11670	NGR/2/73	Cattle	82.73	0	A	AFRICA	G-V	None
10103	KEN/42/66		82.65	0	A	AFRICA	G-I	None
17154	UGA/13/66	Cattle	81.98	0	A	AFRICA	G-VII	None
4935	EGY/1/72	Bovine	81.36	0	A	AFRICA	G-II	None
17478	UKG/119/32_(A12)	Cattle	80.89	0	A	EURO-SA	A12	None
15377	Bangkok/TAI/60_(A15)		80.13	0	A	ASIA	A15	None
10049	KEN/29/2005	Cattle	79.94	0	A	AFRICA	G-VII	None
9031	IRQ/24/64_(A22)		79.84	0	A	ASIA	A22	None
8476	IRN/22/99	Bovine	79.75	0	A	ASIA	Iran-99	None

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

Virus sample: ETH/15/2025

Sample details

Reception Date:	2025-09-11
Sender reference:	20972
Location of origin:	Ewa, Fanti Rasu, Afar
Country of origin:	Ethiopia
Date of collection:	2025-06-12
Host species:	cattle

Genotyping details

Serotype:	A
Topotype:	AFRICA
Lineage:	G-IV
Sublineage:	None

Sequencing details

Material submitted for sequencing:	WRL-LFBK1
Material Harvest Date:	2025-10-08
Sequence length:	633
Ambiguities:	0

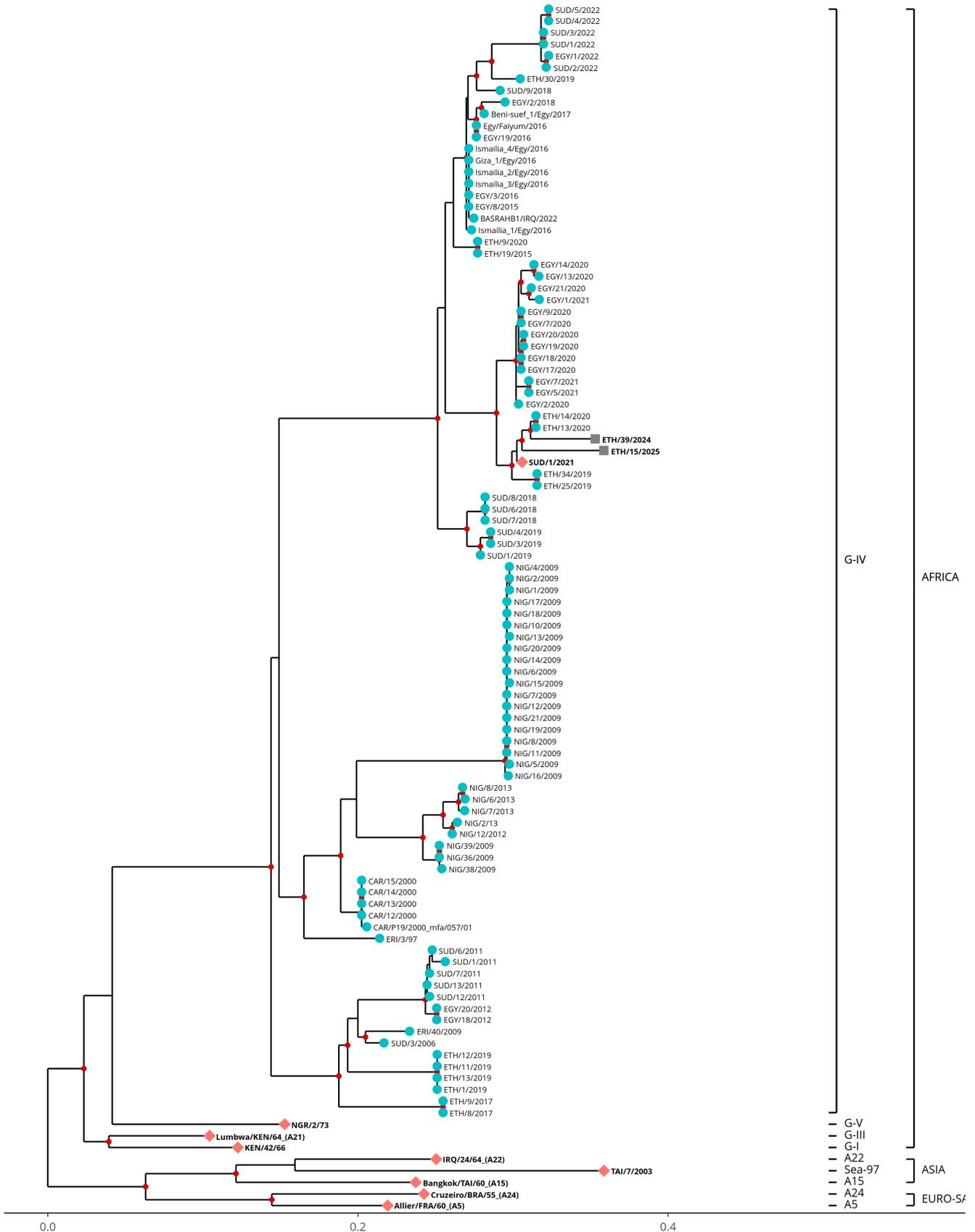
Most Closely Related FMDV Isolates

Sequence ID	Virus Name	Host	% Id	#Ambig.	Serotype	Topotype	Lineage	Sublineage
FMDV VP1 Sequences								
296503	ETH/13/2020	Bovine	95.11	0	A	AFRICA	G-IV	None
296504	ETH/14/2020	Bovine	95.11	0	A	AFRICA	G-IV	None
296498	ETH/25/2019	Bovine	94.16	0	A	AFRICA	G-IV	None
296500	ETH/34/2019	Bovine	94.16	0	A	AFRICA	G-IV	None
296482	EGY/17/2020	Cattle	93.69	0	A	AFRICA	G-IV	None
296483	EGY/18/2020	Cattle	93.69	0	A	AFRICA	G-IV	None
854761	Egy/AHRI-Rv42_(3)/2020/VP1	Cattle	93.69	0	A	None	None	None
855181	Egy/Dakahlia/2020/VP1	Cattle	93.69	0	A	None	None	None
855519	Egypt_1SD	Cattle	93.58	0	A	None	None	None
855520	Egypt_2SD	Cattle	93.58	0	A	None	None	None
FMDV VP1 Prototype Sequences*								
296629	SUD/1/2021	Cattle	95.11	0	A	AFRICA	G-IV	None
10103	KEN/42/66		82.75	0	A	AFRICA	G-I	None
17478	UKG/119/32_(A12)	Cattle	81.88	0	A	EURO-SA	A12	None
4935	EGY/1/72	Bovine	81.83	0	A	AFRICA	G-II	None
11670	NGR/2/73	Cattle	81.79	0	A	AFRICA	G-V	None
5839	Allier/FRA/60_(A5)		81.74	0	A	EURO-SA	A5	None
17154	UGA/13/66	Cattle	81.63	0	A	AFRICA	G-VII	None
10049	KEN/29/2005	Cattle	80.98	0	A	AFRICA	G-VII	None
8476	IRN/22/99	Bovine	80.92	0	A	ASIA	Iran-99	None
15800	TAI/7/2003	Cattle	79.52	0	A	ASIA	Sea-97	None

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

Tree

■ Uploaded sequence
 ● Database sequence
 ◆ Reference sequence



Analysis Parameters

Query sequence set: WRLFMD/2025/000016
Number of related sequences reported: 93
Number of prototype sequences in tree: 9
Minimal VP1 subsequence match length: 610
Sequence alignment length: 637

Number of sequences in tree capped at: 100
Sequence alignment method: MAFFT 7.522
Phylogeny reconstruction method: IQ-TREE 2.26
Number of bootstrap samples: 1000
Displaying bootstrap values above: 75

FMDV VP1 Sequences included in the Phylogenetic Tree

Sequence Name	GenBank Accession	Host	Ref Lab	Country	FMDV Taxonomy	Pubmed Reference Number
NIG/1/2009 *	JN680709	Cattle	PIADC	Nigeria	A/AFRICA/G-IV	23347819
NIG/10/2009 *	JN680718	Cattle	PIADC	Nigeria	A/AFRICA/G-IV	23347819
NIG/11/2009 *	JN680719	Cattle	PIADC	Nigeria	A/AFRICA/G-IV	23347819
NIG/12/2009 *	JN680720	Cattle	PIADC	Nigeria	A/AFRICA/G-IV	23347819
NIG/12/2012	KX258057	Bovine	WRLFMD	Nigeria	A/AFRICA/G-IV	27718336
NIG/13/2009 *	JN680721	Cattle	PIADC	Nigeria	A/AFRICA/G-IV	23347819
NIG/14/2009 *	JN680722	Cattle	PIADC	Nigeria	A/AFRICA/G-IV	23347819
NIG/15/2009 *	JN680723	Cattle	PIADC	Nigeria	A/AFRICA/G-IV	23347819
NIG/16/2009 *	JN680724	Cattle	PIADC	Nigeria	A/AFRICA/G-IV	23347819
NIG/17/2009 *	JN680725	Cattle	PIADC	Nigeria	A/AFRICA/G-IV	23347819
NIG/18/2009 *	JN680726	Cattle	PIADC	Nigeria	A/AFRICA/G-IV	23347819
NIG/19/2009 *	JN680727	Cattle	PIADC	Nigeria	A/AFRICA/G-IV	23347819
NIG/2/13 *	KY584071	Bovine	CODA-CERVA	Nigeria	A/AFRICA/G-IV	28097814
NIG/2/2009 *	JN680710	Cattle	PIADC	Nigeria	A/AFRICA/G-IV	23347819
NIG/20/2009 *	JN680728	Cattle	PIADC	Nigeria	A/AFRICA/G-IV	23347819
NIG/21/2009 *	JN680729	Cattle	PIADC	Nigeria	A/AFRICA/G-IV	23347819
NIG/36/2009	KX258050	Cattle	WRLFMD	Nigeria	A/AFRICA/G-IV	27718336
NIG/38/2009	KX258051	Cattle	WRLFMD	Nigeria	A/AFRICA/G-IV	27718336
NIG/39/2009	KX258052	Cattle	WRLFMD	Nigeria	A/AFRICA/G-IV	27718336
NIG/4/2009 *	JN680712	Cattle	PIADC	Nigeria	A/AFRICA/G-IV	23347819
NIG/5/2009 *	JN680713	Cattle	PIADC	Nigeria	A/AFRICA/G-IV	23347819
NIG/6/2009 *	JN680714	Cattle	PIADC	Nigeria	A/AFRICA/G-IV	23347819
NIG/6/2013	KX258059	Bovine	WRLFMD	Nigeria	A/AFRICA/G-IV	27718336
NIG/7/2009 *	JN680715	Cattle	PIADC	Nigeria	A/AFRICA/G-IV	23347819
NIG/7/2013	KX258060	Bovine	WRLFMD	Nigeria	A/AFRICA/G-IV	27718336
NIG/8/2009 *	JN680716	Cattle	PIADC	Nigeria	A/AFRICA/G-IV	23347819
NIG/8/2013	KX258061	Bovine	WRLFMD	Nigeria	A/AFRICA/G-IV	27718336
SUD/1/2011	MK422575	Cattle	WRLFMD	Sudan	A/AFRICA/G-IV	None
SUD/12/2011	MK422579	Cattle	WRLFMD	Sudan	A/AFRICA/G-IV	None
SUD/13/2011	MK422578	Cattle	WRLFMD	Sudan	A/AFRICA/G-IV	None
SUD/3/2006	GU566070	Cattle	WRLFMD	Sudan	A/AFRICA/G-IV	20626708
SUD/6/2011	MK422576	Cattle	WRLFMD	Sudan	A/AFRICA/G-IV	None
SUD/6/2018	MK422591	Cattle	WRLFMD	Sudan	A/AFRICA/G-IV	None
SUD/7/2011	MK422577	Cattle	WRLFMD	Sudan	A/AFRICA/G-IV	None
SUD/7/2018	MK422592	Cattle	WRLFMD	Sudan	A/AFRICA/G-IV	None
SUD/8/2018	MK422593	Cattle	WRLFMD	Sudan	A/AFRICA/G-IV	None
SUD/9/2018	MK422594	Cattle	WRLFMD	Sudan	A/AFRICA/G-IV	None
EGY/2/2020	None	Cattle	WRLFMD	Egypt	A/AFRICA/G-IV	None
EGY/7/2020	None	Water Buffalo	WRLFMD	Egypt	A/AFRICA/G-IV	None
EGY/9/2020	None	Cattle	WRLFMD	Egypt	A/AFRICA/G-IV	None
EGY/13/2020	None	Cattle	WRLFMD	Egypt	A/AFRICA/G-IV	None
EGY/14/2020	None	Cattle	WRLFMD	Egypt	A/AFRICA/G-IV	None
EGY/17/2020	None	Cattle	WRLFMD	Egypt	A/AFRICA/G-IV	None
EGY/18/2020	None	Cattle	WRLFMD	Egypt	A/AFRICA/G-IV	None
EGY/19/2020	None	Cattle	WRLFMD	Egypt	A/AFRICA/G-IV	None
EGY/20/2020	None	Cattle	WRLFMD	Egypt	A/AFRICA/G-IV	None
EGY/21/2020	None	Cattle	WRLFMD	Egypt	A/AFRICA/G-IV	None
EGY/1/2021	None	Water Buffalo	WRLFMD	Egypt	A/AFRICA/G-IV	None
EGY/5/2021	None	Cattle	WRLFMD	Egypt	A/AFRICA/G-IV	None
EGY/7/2021	None	Cattle	WRLFMD	Egypt	A/AFRICA/G-IV	None
EGY/1/2022	None	Cattle	WRLFMD	Egypt	A/AFRICA/G-IV	None
ETH/25/2019	PQ847908	Bovine	WRLFMD	Ethiopia	A/AFRICA/G-IV	None
ETH/30/2019	PQ847909	Bovine	WRLFMD	Ethiopia	A/AFRICA/G-IV	None
ETH/34/2019	PQ847910	Bovine	WRLFMD	Ethiopia	A/AFRICA/G-IV	None
ETH/9/2020	PQ847912	Bovine	WRLFMD	Ethiopia	A/AFRICA/G-IV	None
ETH/13/2020	PQ847913	Bovine	WRLFMD	Ethiopia	A/AFRICA/G-IV	None
ETH/14/2020	PQ847914	Bovine	WRLFMD	Ethiopia	A/AFRICA/G-IV	None
SUD/1/2019	PQ587554	Cattle	WRLFMD	Sudan	A/AFRICA/G-IV	None
SUD/3/2019	PQ587555	Cattle	WRLFMD	Sudan	A/AFRICA/G-IV	None
SUD/4/2019	PQ587556	Cattle	WRLFMD	Sudan	A/AFRICA/G-IV	None
SUD/1/2022	PQ587558	Cattle	WRLFMD	Sudan	A/AFRICA/G-IV	None
SUD/2/2022	PQ587559	Cattle	WRLFMD	Sudan	A/AFRICA/G-IV	None

FMDV VP1 Sequences included in the Phylogenetic Tree (continued)

Sequence Name	GenBank Accession	Host	Ref Lab	Country	FMDV Taxonomy	Pubmed Reference Number
SUD/3/2022	PQ587560	Cattle	WRLFMD	Sudan	A/AFRICA/G-IV	None
SUD/4/2022	PQ587561	Cattle	WRLFMD	Sudan	A/AFRICA/G-IV	None
SUD/5/2022	PQ587562	Cattle	WRLFMD	Sudan	A/AFRICA/G-IV	None
CAR/12/2000	KX258130	Cattle	WRLFMD	Cameroon	A/AFRICA/G-IV	None
CAR/13/2000	KX258131	Cattle	WRLFMD	Cameroon	A/AFRICA/G-IV	None
CAR/14/2000	KX258132	Cattle	WRLFMD	Cameroon	A/AFRICA/G-IV	None
CAR/15/2000	EF208755	Bovine	WRLFMD	Cameroon	A/AFRICA/G-IV	None
CAR/P19/2000_mfa/057/01	None	Cattle	WRLFMD	Cameroon	A/AFRICA/G-IV	None
BASRAHB1/IRQ/2022 *	LC771233	Water Buffalo	U-BASRAH	Iraq	A/AFRICA/G-IV	None
Beni-suef_1/Egy/2017 *	MF322693		MEVAC	Egypt	A/AFRICA/G-IV	None
EGY/18/2012	None	Cattle	WRLFMD	Egypt	A/AFRICA/G-IV	None
EGY/19/2016	MK572799	Cattle	WRLFMD	Egypt	A/AFRICA/G-IV	None
EGY/2/2018	None	Cattle	WRLFMD	Egypt	A/AFRICA/G-IV	None
EGY/20/2012	None	Cattle	WRLFMD	Egypt	A/AFRICA/G-IV	None
EGY/3/2016	MK422574	Cattle	WRLFMD	Egypt	A/AFRICA/G-IV	None
EGY/8/2015	MK422573	Cattle	WRLFMD	Egypt	A/AFRICA/G-IV	None
Egy/Faiyum/2016 *	MG552843	Cattle	AHRI-GIZA	Egypt	A/AFRICA/G-IV	None
Giza_1/Egy/2016 *	KX447000	Cattle	SCU	Egypt	A/AFRICA/G-IV	None
Ismailia_1/Egy/2016 *	KX446996	Cattle	SCU	Egypt	A/AFRICA/G-IV	None
Ismailia_2/Egy/2016 *	KX446997	Cattle	SCU	Egypt	A/AFRICA/G-IV	None
Ismailia_3/Egy/2016 *	KX446998	Cattle	SCU	Egypt	A/AFRICA/G-IV	None
Ismailia_4/Egy/2016 *	KX446999	Cattle	SCU	Egypt	A/AFRICA/G-IV	None
ERI/3/97	KX258043	Cattle	WRLFMD	Eritrea	A/AFRICA/G-IV	27718336
ERI/40/2009	None	Cattle	WRLFMD	Eritrea	A/AFRICA/G-IV	None
ETH/1/2019	MN987534	Cattle	WRLFMD	Ethiopia	A/AFRICA/G-IV	None
ETH/11/2019	MN987537	Cattle	WRLFMD	Ethiopia	A/AFRICA/G-IV	None
ETH/12/2019	MN987538	Cattle	WRLFMD	Ethiopia	A/AFRICA/G-IV	None
ETH/13/2019	MN987539	Cattle	WRLFMD	Ethiopia	A/AFRICA/G-IV	None
ETH/19/2015	MN987497	Bovine	WRLFMD	Ethiopia	A/AFRICA/G-IV	None
ETH/8/2017	MN987498	Cattle	WRLFMD	Ethiopia	A/AFRICA/G-IV	None
ETH/9/2017	MN987499	Cattle	WRLFMD	Ethiopia	A/AFRICA/G-IV	None

* Not a WRLFMD Reference Number;

^ Not Available