



**INSTITUTE FOR ANIMAL HEALTH**

Acting Director: Professor David Paton MA, VetMB, PhD, MRCVS

PIRBRIGHT LABORATORY

Ash Road,

Pirbright,

Surrey,

GU24 0NF

Intn Tel: 00 44 1483 232441

Tel: 01483 232441 Fax: 01483 232621

## FMD Sequencing Report

Lab Reference WRL Batch Number: WRLFMD/2011/00008

Sender Details:



Date Received: 9<sup>th</sup> February 2011

Country of Origin: Kenya

Date Reported: 31<sup>st</sup> March 2011

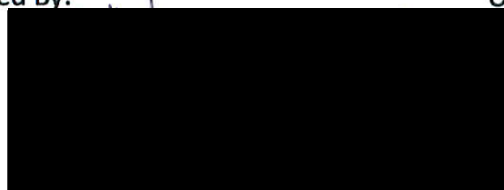
Dear Dr. Abraham K. Sangula,

Re.: Serotype O

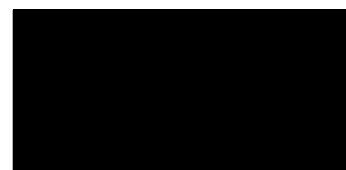
Sequencing work has now been completed in respect of the samples you submitted and the details are as attached. Please note that all of our phylogenetic trees can be accessed via the internet at:

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

Results Approved By:



Official Stamp:



Date:

31/3/11

To help us improve the quality of our service, please send any suggestions or requests to the Reference Laboratory by fax (+44 (0) 1483 232621 or email: [elizabeth.wilson@bbsrc.ac.uk](mailto:elizabeth.wilson@bbsrc.ac.uk))

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

## Genotyping Report

Report Date for this Batch: 23 March 2011

FMDV type O

Country: Kenya

Period: 2010-2011

No. of samples: 9

BATCH: WRLFMD/2011/00008



The contents of this report are copyright and should not be reproduced without permission

© Institute for Animal Health

# FAO World Reference Laboratory for FMD Genotyping Report

IAH-P-EP-MEG-FOR-005-3

Page 1 of 1

Serotype: O	Report date: 23/03/2011
WRLFMD Ref No: KEN/137/2010	Reported by: N.J. Knowles
Batch No: WRLFMD/2011/00008	Checked by: D.P. King
Sender Ref: K152/10 6.7.10	
Location: Transmara, Kenya	Topotype: EA-2
Date collected: 06/07/2010	Genotype/strain: unnamed
Date received by WRLFMD: 09/02/2011	Sequence filename: KEN10137.SEQ
Date received for sequencing: 16/03/2011	Date sequence last updated: 23/03/2011
Species: Cattle	No. of Nt determined: 639
Material used: BTy2	No. of ambiguities: 0
Region sequenced: VP1	Gene length: 639
RT-PCR primers: O-1C244F/EUR-2B52R	Total no. of comparisons: 2693
O-1C272F/EUR-2B52R	Min. no. of nt for comparison: 600
	Total turn-around time: 42 days
	Sequencing time: 7 days
Comments:	

Most Closely Related Viruses									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	O/KEN/151/2010	KEN10151	639	639	0	100.00	0.00	EA-2	Unnamed
2	O/TAN/2/2004	TAN04-02	639	621	0	97.18	2.82	EA-2	unnamed
3	O/TAN/3/2004	TAN04-03	639	621	0	97.18	2.82	EA-2	unnamed
4	O/TAN/12/2004	TAN04-12	639	619	0	96.87	3.13	EA-2	unnamed
5	O/KEN/10/2005	KEN05-10	639	618	0	96.71	3.29	EA-2	unnamed
6	O/KEN/27/2005	KEN05-27	639	616	0	96.40	3.60	EA-2	unnamed
7	O/K48/05* (HM756624)	KEN05-AC	639	615	0	96.24	3.76	EA-2	Unnamed
8	O/KEN/14/2005	KEN05-14	639	614	0	96.09	3.91	EA-2	unnamed
9	O/K4/08* (HM756636)	KEN08-AB	639	608	0	95.15	4.85	EA-2	Unnamed
10	O/KEN/10/2008	KEN08-10	639	608	0	95.15	4.85	EA-2	unnamed
Most Closely Related Reference Viruses									
(see <a href="http://www.wrlfmd.org/fmd_genotyping/prototypes.htm">http://www.wrlfmd.org/fmd_genotyping/prototypes.htm</a> )									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	O/TAN/2/2004	TAN04-02	639	621	0	97.18	2.82	EA-2	unnamed
2	O/KEN/5/2002 (DQ165073)	KEN02-05	639	581	0	90.92	9.08	EA-2	Unnamed
3	O/UGA/3/2002 (DQ165077)	UGA02-03	639	581	0	90.92	9.08	EA-2	unnamed
4	O/MAL/1/98 (DQ165074)	MAL98-01	639	572	0	89.51	10.49	EA-2	unnamed
5	O/K40/84*	KEN84-40	639	548	0	85.76	14.24	EA-1	unnamed
6	O/ETH/1/2007 (FJ798137)	ETH07-01	639	546	0	85.45	14.55	EA-3	unnamed
7	O/IRN/61/2001 (DQ164896)	IRN01-61	638	541	1	84.80	15.20	ME-SA	Irn-2001
8	O/UAE/4/2008	UAE08-04	636	538	0	84.59	15.41	ME-SA	Ind-2001c
9	O/ETH/3/2004 (FJ798109)	ETH04-03	639	539	0	84.35	15.65	EA-3	unnamed
10	O/K83/79* (AJ303511)	KEN79B83	638	538	1	84.33	15.67	EA-1	unnamed

nt, nucleotides

\*, not a WRLFMD reference number

Assembled with Report Generator v4.0

© Institute for Animal Health

# FAO World Reference Laboratory for FMD Genotyping Report

IAH-P-EP-MEG-FOR-005-3

Page 1 of 1

Serotype: O	Report date: 23/03/2011
WRLFMD Ref No: KEN/145/2010	Reported by: N.J. Knowles
Batch No: WRLFMD/2011/00008	Checked by: D.P. King
Sender Ref: K211/10 19.10.10	
Location: Kipkelion, Kenya	Topotype: EA-2
Date collected: 19/10/2010	Genotype/strain: unnamed
Date received by WRLFMD: 09/02/2011	Sequence filename: KEN10145.SEQ
Date received for sequencing: 16/03/2011	Date sequence last updated: 23/03/2011
Species: Cattle	No. of Nt determined: 639
Material used: BTy1	No. of ambiguities: 0
Region sequenced: VP1	Gene length: 639
RT-PCR primers: O-1C244F/EUR-2B52R	Total no. of comparisons: 2693
O-1C272F/EUR-2B52R	Min. no. of nt for comparison: 600
	Total turn-around time: 42 days
	Sequencing time: 7 days
Comments:	

Most Closely Related Viruses									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	O/KEN/146/2010	KEN10146	639	635	0	99.37	0.63	EA-2	Unnamed
2	O/TAN/2/2004	TAN04-02	639	613	0	95.93	4.07	EA-2	unnamed
3	O/TAN/3/2004	TAN04-03	639	613	0	95.93	4.07	EA-2	unnamed
4	O/KEN/10/2005	KEN05-10	639	612	0	95.77	4.23	EA-2	unnamed
5	O/KEN/27/2005	KEN05-27	639	611	0	95.62	4.38	EA-2	unnamed
6	O/TAN/12/2004	TAN04-12	639	611	0	95.62	4.38	EA-2	unnamed
7	O/K48/05* (HM756624)	KEN05-AC	639	610	0	95.46	4.54	EA-2	Unnamed
8	O/KEN/14/2005	KEN05-14	639	609	0	95.31	4.69	EA-2	unnamed
9	O/KEN/137/2010	KEN10137	639	608	0	95.15	4.85	EA-2	Unnamed
10	O/KEN/151/2010	KEN10151	639	608	0	95.15	4.85	EA-2	Unnamed
Most Closely Related Reference Viruses									
(see <a href="http://www.wrlfmd.org/fmd_genotyping/prototypes.htm">http://www.wrlfmd.org/fmd_genotyping/prototypes.htm</a> )									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	O/TAN/2/2004	TAN04-02	639	613	0	95.93	4.07	EA-2	unnamed
2	O/KEN/5/2002 (DQ165073)	KEN02-05	639	581	0	90.92	9.08	EA-2	Unnamed
3	O/MAL/1/98 (DQ165074)	MAL98-01	639	575	0	89.98	10.02	EA-2	unnamed
4	O/UGA/3/2002 (DQ165077)	UGA02-03	639	575	0	89.98	10.02	EA-2	unnamed
5	O/ETH/1/2007 (FJ798137)	ETH07-01	639	541	0	84.66	15.34	EA-3	unnamed
6	O/K40/84*	KEN84-40	639	541	0	84.66	15.34	EA-1	unnamed
7	O/IRN/61/2001 (DQ164896)	IRN01-61	638	538	1	84.33	15.67	ME-SA	Irn-2001
8	O/UAE/4/2008	UAE08-04	636	534	0	83.96	16.04	ME-SA	Ind-2001c
9	O/IND/53/79 (AF292107)	IND79A53	639	536	0	83.88	16.12	ME-SA	unnamed
10	O/K83/79* (AJ303511)	KEN79B83	638	533	1	83.54	16.46	EA-1	unnamed

nt, nucleotides

\*, not a WRLFMD reference number

Assembled with Report Generator v4.0

© Institute for Animal Health

# FAO World Reference Laboratory for FMD Genotyping Report

IAH-P-EP-MEG-FOR-005-3

Page 1 of 1

Serotype: O WRLFMD Ref No: KEN/146/2010 Batch No: WRLFMD/2011/00008 Sender Ref: K220/10 16.11.10 Location: Nakuru North, Kenya Date collected: 16/11/2010 Date received by WRLFMD: 09/02/2011 Date received for sequencing: 16/03/2011 Species: Cattle Material used: BTy1 Region sequenced: VP1 RT-PCR primers: O-1C272F/EUR-2B52R	Report date: 23/03/2011 Reported by: N.J. Knowles Checked by: D.P. King  Topotype: EA-2 Genotype/strain: unnamed Sequence filename: KEN10146.SEQ Date sequence last updated: 23/03/2011 No. of Nt determined: 639 No. of ambiguities: 0 Gene length: 639 Total no. of comparisons: 2693 Min. no. of nt for comparison: 600 Total turn-around time: 42 days Sequencing time: 7 days
Comments:	

<b>Most Closely Related Viruses</b>									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	O/KEN/145/2010	KEN10145	639	635	0	99.37	0.63	EA-2	Unnamed
2	O/TAN/2/2004	TAN04-02	639	613	0	95.93	4.07	EA-2	unnamed
3	O/TAN/3/2004	TAN04-03	639	613	0	95.93	4.07	EA-2	unnamed
4	O/KEN/10/2005	KEN05-10	639	612	0	95.77	4.23	EA-2	unnamed
5	O/KEN/27/2005	KEN05-27	639	611	0	95.62	4.38	EA-2	unnamed
6	O/TAN/12/2004	TAN04-12	639	611	0	95.62	4.38	EA-2	unnamed
7	O/K48/05* (HM756624)	KEN05-AC	639	610	0	95.46	4.54	EA-2	Unnamed
8	O/KEN/14/2005	KEN05-14	639	609	0	95.31	4.69	EA-2	unnamed
9	O/KEN/137/2010	KEN10137	639	608	0	95.15	4.85	EA-2	Unnamed
10	O/KEN/151/2010	KEN10151	639	608	0	95.15	4.85	EA-2	Unnamed
<b>Most Closely Related Reference Viruses</b>									
(see <a href="http://www.wrlfmd.org/fmd_genotyping/prototypes.htm">http://www.wrlfmd.org/fmd_genotyping/prototypes.htm</a> )									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	O/TAN/2/2004	TAN04-02	639	613	0	95.93	4.07	EA-2	unnamed
2	O/KEN/5/2002 (DQ165073)	KEN02-05	639	579	0	90.61	9.39	EA-2	Unnamed
3	O/UGA/3/2002 (DQ165077)	UGA02-03	639	575	0	89.98	10.02	EA-2	unnamed
4	O/MAL/1/98 (DQ165074)	MAL98-01	639	574	0	89.83	10.17	EA-2	unnamed
5	O/ETH/1/2007 (FJ798137)	ETH07-01	639	541	0	84.66	15.34	EA-3	unnamed
6	O/K40/84*	KEN84-40	639	540	0	84.51	15.49	EA-1	unnamed
7	O/IRN/61/2001 (DQ164896)	IRN01-61	638	536	1	84.01	15.99	ME-SA	Irn-2001
8	O/UAE/4/2008	UAE08-04	636	532	0	83.65	16.35	ME-SA	Ind-2001c
9	O/IND/53/79 (AF292107)	IND79A53	639	534	0	83.57	16.43	ME-SA	unnamed
10	O/ETH/3/2004 (FJ798109)	ETH04-03	639	533	0	83.41	16.59	EA-3	unnamed

nt, nucleotides

\*, not a WRLFMD reference number

Assembled with Report Generator v4.0

© Institute for Animal Health

# FAO World Reference Laboratory for FMD Genotyping Report

IAH-P-EP-MEG-FOR-005-3

Page 1 of 1

Serotype: O	Report date: 23/03/2011
WRLFMD Ref No: KEN/148/2010	Reported by: N.J. Knowles
Batch No: WRLFMD/2011/00008	Checked by: D.P. King
Sender Ref: K222/10 17.11.10	
Location: Rongai, Kenya	Topotype: EA-2
Date collected: 17/11/2010	Genotype/strain: Unnamed
Date received by WRLFMD: 09/02/2011	Sequence filename: KEN10148.SEQ
Date received for sequencing: 16/03/2011	Date sequence last updated: 18/03/2011
Species: Cattle	No. of Nt determined: 639
Material used: BTy1	No. of ambiguities: 0
Region sequenced: VP1	Gene length: 639
RT-PCR primers: O-1C244F/EUR-2B52R	Total no. of comparisons: 2693
O-1C272F/EUR-2B52R	Min. no. of nt for comparison: 600
	Total turn-around time: 42 days
	Sequencing time: 7 days
Comments:	

Most Closely Related Viruses									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	O/KEN/152/2010	KEN10152	639	637	0	99.69	0.31	EA-2	Unnamed
2	O/KEN/1/2011	KEN11-01	639	634	0	99.22	0.78	EA-2	Unnamed
3	O/K31/05* (HM756623)	KEN05-AB	639	615	0	96.24	3.76	EA-2	Unnamed
4	O/KEN/26/2005	KEN05-26	639	615	0	96.24	3.76	EA-2	unnamed
5	O/KEN/30/2004	KEN04-30	639	614	0	96.09	3.91	EA-2	unnamed
6	O/K6/07* (HM756630)	KEN07-AB	639	611	0	95.62	4.38	EA-2	Unnamed
7	O/KEN/6/2005	KEN05-06	639	611	0	95.62	4.38	EA-2	unnamed
8	O/KEN/7/2002	KEN02-07	639	611	0	95.62	4.38	EA-2	Unnamed
9	O/KEN/4/2005	KEN05-04	639	610	0	95.46	4.54	EA-2	unnamed
10	O/K2/07* (HM756629)	KEN07-AA	639	609	0	95.31	4.69	EA-2	Unnamed
Most Closely Related Reference Viruses									
(see <a href="http://www.wrlfmd.org/fmd_genotyping/prototypes.htm">http://www.wrlfmd.org/fmd_genotyping/prototypes.htm</a> )									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	O/KEN/5/2002 (DQ165073)	KEN02-05	639	598	0	93.58	6.42	EA-2	Unnamed
2	O/UGA/3/2002 (DQ165077)	UGA02-03	639	584	0	91.39	8.61	EA-2	unnamed
3	O/MAL/1/98 (DQ165074)	MAL98-01	639	575	0	89.98	10.02	EA-2	unnamed
4	O/TAN/2/2004	TAN04-02	639	574	0	89.83	10.17	EA-2	unnamed
5	O/K40/84*	KEN84-40	639	554	0	86.70	13.30	EA-1	unnamed
6	O/UAE/4/2008	UAE08-04	636	549	0	86.32	13.68	ME-SA	Ind-2001c
7	O/UKG/35/2001 (AJ539141)	UKG01-35	639	549	0	85.92	14.08	ME-SA	PanAsia
8	O/KUW/3/97 (DQ164904)	KUW97-03	639	547	0	85.60	14.40	ME-SA	Ind-2001a
9	O/IRN/31/2009	IRN09-31	639	546	0	85.45	14.55	ME-SA	PanAsia-2 <sup>FAR-09</sup>
10	O/OMN/7/2001 (DQ164941)	OMN01-07	639	546	0	85.45	14.55	ME-SA	Ind-2001b

nt, nucleotides

\*, not a WRLFMD reference number

Assembled with Report Generator v4.0

© Institute for Animal Health

# FAO World Reference Laboratory for FMD Genotyping Report

IAH-P-EP-MEG-FOR-005-3

Page 1 of 1

Serotype: O	Report date: 23/03/2011
WRLFMD Ref No: KEN/150/2010	Reported by: N.J. Knowles
Batch No: WRLFMD/2011/00008	Checked by: D.P. King
Sender Ref: K224/10 22.11.10	
Location: Kinango, Kenya	Topotype: EA-2
Date collected: 22/11/2010	Genotype/strain: unnamed
Date received by WRLFMD: 09/02/2011	Sequence filename: KEN10150.SEQ
Date received for sequencing: 16/03/2011	Date sequence last updated: 23/03/2011
Species: Cattle	No. of Nt determined: 639
Material used: BTy1	No. of ambiguities: 0
Region sequenced: VP1	Gene length: 639
RT-PCR primers: O-1C244F/EUR-2B52R	Total no. of comparisons: 2693
O-1C272F/EUR-2B52R	Min. no. of nt for comparison: 600
	Total turn-around time: 42 days
	Sequencing time: 7 days
Comments:	

Most Closely Related Viruses									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	O/KEN/10/2005	KEN05-10	639	614	0	96.09	3.91	EA-2	unnamed
2	O/TAN/2/2004	TAN04-02	639	614	0	96.09	3.91	EA-2	unnamed
3	O/TAN/3/2004	TAN04-03	639	614	0	96.09	3.91	EA-2	unnamed
4	O/KEN/27/2005	KEN05-27	639	612	0	95.77	4.23	EA-2	unnamed
5	O/TAN/12/2004	TAN04-12	639	612	0	95.77	4.23	EA-2	unnamed
6	O/K48/05* (HM756624)	KEN05-AC	639	611	0	95.62	4.38	EA-2	Unnamed
7	O/KEN/14/2005	KEN05-14	639	610	0	95.46	4.54	EA-2	unnamed
8	O/KEN/137/2010	KEN10137	639	604	0	94.52	5.48	EA-2	Unnamed
9	O/KEN/145/2010	KEN10145	639	604	0	94.52	5.48	EA-2	Unnamed
10	O/KEN/151/2010	KEN10151	639	604	0	94.52	5.48	EA-2	Unnamed
Most Closely Related Reference Viruses									
(see <a href="http://www.wrlfmd.org/fmd_genotyping/prototypes.htm">http://www.wrlfmd.org/fmd_genotyping/prototypes.htm</a> )									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	O/TAN/2/2004	TAN04-02	639	614	0	96.09	3.91	EA-2	unnamed
2	O/KEN/5/2002 (DQ165073)	KEN02-05	639	582	0	91.08	8.92	EA-2	Unnamed
3	O/MAL/1/98 (DQ165074)	MAL98-01	639	576	0	90.14	9.86	EA-2	unnamed
4	O/UGA/3/2002 (DQ165077)	UGA02-03	639	576	0	90.14	9.86	EA-2	unnamed
5	O/K40/84*	KEN84-40	639	545	0	85.29	14.71	EA-1	unnamed
6	O/IRN/61/2001 (DQ164896)	IRN01-61	638	541	1	84.80	15.20	ME-SA	Irn-2001
7	O/ETH/1/2007 (FJ798137)	ETH07-01	639	539	0	84.35	15.65	EA-3	unnamed
8	O/UAE/4/2008	UAE08-04	636	536	0	84.28	15.72	ME-SA	Ind-2001c
9	O/IND/53/79 (AF292107)	IND79A53	639	538	0	84.19	15.81	ME-SA	unnamed
10	O/K83/79* (AJ303511)	KEN79B83	638	537	1	84.17	15.83	EA-1	unnamed

nt, nucleotides

\*, not a WRLFMD reference number

Assembled with Report Generator v4.0

© Institute for Animal Health

# FAO World Reference Laboratory for FMD Genotyping Report

IAH-P-EP-MEG-FOR-005-3

Page 1 of 1

Serotype: O	Report date: 23/03/2011
WRLFMD Ref No: KEN/151/2010	Reported by: N.J. Knowles
Batch No: WRLFMD/2011/00008	Checked by: D.P. King
Sender Ref: K233/10 1.12.10	
Location: Kajiado Central, Kenya	Topotype: EA-2
Date collected: 01/12/2010	Genotype/strain: unnamed
Date received by WRLFMD: 09/02/2011	Sequence filename: KEN10151.SEQ
Date received for sequencing: 16/03/2011	Date sequence last updated: 23/03/2011
Species: Cattle	No. of Nt determined: 639
Material used: BTy1	No. of ambiguities: 0
Region sequenced: VP1	Gene length: 639
RT-PCR primers: O-1C244F/EUR-2B52R	Total no. of comparisons: 2693
O-1C272F/EUR-2B52R	Min. no. of nt for comparison: 600
	Total turn-around time: 42 days
	Sequencing time: 7 days
Comments:	

Most Closely Related Viruses									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	O/KEN/137/2010	KEN10137	639	639	0	100.00	0.00	EA-2	Unnamed
2	O/TAN/2/2004	TAN04-02	639	621	0	97.18	2.82	EA-2	unnamed
3	O/TAN/3/2004	TAN04-03	639	621	0	97.18	2.82	EA-2	unnamed
4	O/TAN/12/2004	TAN04-12	639	619	0	96.87	3.13	EA-2	unnamed
5	O/KEN/10/2005	KEN05-10	639	618	0	96.71	3.29	EA-2	unnamed
6	O/KEN/27/2005	KEN05-27	639	616	0	96.40	3.60	EA-2	unnamed
7	O/K48/05* (HM756624)	KEN05-AC	639	615	0	96.24	3.76	EA-2	Unnamed
8	O/KEN/14/2005	KEN05-14	639	614	0	96.09	3.91	EA-2	unnamed
9	O/K4/08* (HM756636)	KEN08-AB	639	608	0	95.15	4.85	EA-2	Unnamed
10	O/KEN/10/2008	KEN08-10	639	608	0	95.15	4.85	EA-2	unnamed
Most Closely Related Reference Viruses									
(see <a href="http://www.wrlfmd.org/fmd_genotyping/prototypes.htm">http://www.wrlfmd.org/fmd_genotyping/prototypes.htm</a> )									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	O/TAN/2/2004	TAN04-02	639	621	0	97.18	2.82	EA-2	unnamed
2	O/KEN/5/2002 (DQ165073)	KEN02-05	639	581	0	90.92	9.08	EA-2	Unnamed
3	O/UGA/3/2002 (DQ165077)	UGA02-03	639	581	0	90.92	9.08	EA-2	unnamed
4	O/MAL/1/98 (DQ165074)	MAL98-01	639	572	0	89.51	10.49	EA-2	unnamed
5	O/K40/84*	KEN84-40	639	548	0	85.76	14.24	EA-1	unnamed
6	O/ETH/1/2007 (FJ798137)	ETH07-01	639	546	0	85.45	14.55	EA-3	unnamed
7	O/IRN/61/2001 (DQ164896)	IRN01-61	638	541	1	84.80	15.20	ME-SA	Irn-2001
8	O/UAE/4/2008	UAE08-04	636	538	0	84.59	15.41	ME-SA	Ind-2001c
9	O/ETH/3/2004 (FJ798109)	ETH04-03	639	539	0	84.35	15.65	EA-3	unnamed
10	O/K83/79* (AJ303511)	KEN79B83	638	538	1	84.33	15.67	EA-1	unnamed

nt, nucleotides

\*, not a WRLFMD reference number

Assembled with Report Generator v4.0

© Institute for Animal Health



# FAO World Reference Laboratory for FMD Genotyping Report

IAH-P-EP-MEG-FOR-005-3

Page 1 of 1

Serotype: O	Report date: 23/03/2011
WRLFMD Ref No: KEN/152/2010	Reported by: N.J. Knowles
Batch No: WRLFMD/2011/00008	Checked by: D.P. King
Sender Ref: K249/10 23.12.10	
Location: koibatek, Kenya	Topotype: EA-2
Date collected: 23/12/2010	Genotype/strain: Unnamed
Date received by WRLFMD: 09/02/2011	Sequence filename: KEN10152.SEQ
Date received for sequencing: 16/03/2011	Date sequence last updated: 18/03/2011
Species: Cattle	No. of Nt determined: 639
Material used: BTy1	No. of ambiguities: 0
Region sequenced: VP1	Gene length: 639
RT-PCR primers: O-1C244F/EUR-2B52R	Total no. of comparisons: 2693
O-1C272F/EUR-2B52R	Min. no. of nt for comparison: 600
	Total turn-around time: 42 days
	Sequencing time: 7 days
Comments:	

Most Closely Related Viruses									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	O/KEN/148/2010	KEN10148	639	637	0	99.69	0.31	EA-2	Unnamed
2	O/KEN/1/2011	KEN11-01	639	632	0	98.90	1.10	EA-2	Unnamed
3	O/K31/05* (HM756623)	KEN05-AB	639	617	0	96.56	3.44	EA-2	Unnamed
4	O/KEN/26/2005	KEN05-26	639	617	0	96.56	3.44	EA-2	unnamed
5	O/KEN/30/2004	KEN04-30	639	616	0	96.40	3.60	EA-2	unnamed
6	O/KEN/6/2005	KEN05-06	639	613	0	95.93	4.07	EA-2	unnamed
7	O/KEN/4/2005	KEN05-04	639	612	0	95.77	4.23	EA-2	unnamed
8	O/KEN/7/2002	KEN02-07	639	611	0	95.62	4.38	EA-2	Unnamed
9	O/K6/07* (HM756630)	KEN07-AB	639	609	0	95.31	4.69	EA-2	Unnamed
10	O/K2/07* (HM756629)	KEN07-AA	639	607	0	94.99	5.01	EA-2	Unnamed
Most Closely Related Reference Viruses									
(see <a href="http://www.wrlfmd.org/fmd_genotyping/prototypes.htm">http://www.wrlfmd.org/fmd_genotyping/prototypes.htm</a> )									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	O/KEN/5/2002 (DQ165073)	KEN02-05	639	598	0	93.58	6.42	EA-2	Unnamed
2	O/UGA/3/2002 (DQ165077)	UGA02-03	639	584	0	91.39	8.61	EA-2	unnamed
3	O/TAN/2/2004	TAN04-02	639	574	0	89.83	10.17	EA-2	unnamed
4	O/MAL/1/98 (DQ165074)	MAL98-01	639	573	0	89.67	10.33	EA-2	unnamed
5	O/K40/84*	KEN84-40	639	554	0	86.70	13.30	EA-1	unnamed
6	O/UAE/4/2008	UAE08-04	636	549	0	86.32	13.68	ME-SA	Ind-2001c
7	O/UKG/35/2001 (AJ539141)	UKG01-35	639	551	0	86.23	13.77	ME-SA	PanAsia
8	O/KUW/3/97 (DQ164904)	KUW97-03	639	547	0	85.60	14.40	ME-SA	Ind-2001a
9	O/IRN/31/2009	IRN09-31	639	546	0	85.45	14.55	ME-SA	PanAsia-2 <sup>FAR-09</sup>
10	O/IRN/8/2005	IRN05-08	639	544	0	85.13	14.87	ME-SA	PanAsia-2

nt, nucleotides

\*, not a WRLFMD reference number

Assembled with Report Generator v4.0

© Institute for Animal Health

# FAO World Reference Laboratory for FMD Genotyping Report

IAH-P-EP-MEG-FOR-005-3

Page 1 of 1

Serotype: O	Report date: 23/03/2011
WRLFMD Ref No: KEN/154/2010	Reported by: N.J. Knowles
Batch No: WRLFMD/2011/00008	Checked by: D.P. King
Sender Ref: K251/10 29.12.10	
Location: Kwanza, Kenya	Topotype: EA-2
Date collected: 29/12/2010	Genotype/strain: Unnamed
Date received by WRLFMD: 09/02/2011	Sequence filename: KEN10154.SEQ
Date received for sequencing: 16/03/2011	Date sequence last updated: 23/03/2011
Species: Cattle	No. of Nt determined: 639
Material used: BTy1	No. of ambiguities: 0
Region sequenced: VP1	Gene length: 639
RT-PCR primers: O-1C244F/EUR-2B52R	Total no. of comparisons: 2693
O-1C272F/EUR-2B52R	Min. no. of nt for comparison: 600
	Total turn-around time: 42 days
	Sequencing time: 7 days
Comments:	

Most Closely Related Viruses									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	O/K147/00* (HM756612)	KEN00-AH	639	598	0	93.58	6.42	EA-2	Unnamed
2	O/K117/00* (HM756607)	KEN00-AC	639	595	0	93.11	6.89	EA-2	Unnamed
3	O/K145/00* (HM756611)	KEN00-AG	639	595	0	93.11	6.89	EA-2	Unnamed
4	O/UGA/3/2001	UGA01-03	639	594	0	92.96	7.04	?	unnamed
5	O/K141/00* (HM756610)	KEN00-AF	639	592	0	92.64	7.36	EA-2	Unnamed
6	O/K150/00* (HM756613)	KEN00-AI	639	592	0	92.64	7.36	EA-2	Unnamed
7	O/Kumi/UGA/EL-1/02* (FJ461344)	UGA02-AD	639	588	0	92.02	7.98	EA-2	Unnamed
8	O/K117/99* (HM625676;HM756603)	KEN99-AA	639	585	0	91.55	8.45	EA-2	Unnamed
9	O/UGA/3/2002 (DQ165077)	UGA02-03	639	585	0	91.55	8.45	EA-2	unnamed
10	O/UGA/18/2004	UGA04-18	639	583	0	91.24	8.76	EA-2	unnamed
Most Closely Related Reference Viruses									
(see <a href="http://www.wrlfmd.org/fmd_genotyping/prototypes.htm">http://www.wrlfmd.org/fmd_genotyping/prototypes.htm</a> )									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	O/UGA/3/2002 (DQ165077)	UGA02-03	639	585	0	91.55	8.45	EA-2	unnamed
2	O/KEN/5/2002 (DQ165073)	KEN02-05	639	572	0	89.51	10.49	EA-2	Unnamed
3	O/TAN/2/2004	TAN04-02	639	565	0	88.42	11.58	EA-2	unnamed
4	O/MAL/1/98 (DQ165074)	MAL98-01	639	562	0	87.95	12.05	EA-2	unnamed
5	O/K40/84*	KEN84-40	639	547	0	85.60	14.40	EA-1	unnamed
6	O/K83/79* (AJ303511)	KEN79B83	638	538	1	84.33	15.67	EA-1	unnamed
7	O/IND/R2/75* (AF204276)	IND75--A	639	536	0	83.88	16.12	ME-SA	unnamed
8	O/ETH/1/2007 (FJ798137)	ETH07-01	639	535	0	83.72	16.28	EA-3	unnamed
9	O/IND/53/79 (AF292107)	IND79A53	639	535	0	83.72	16.28	ME-SA	unnamed
10	O/SUD/2/86 (DQ165075)	SUD86-02	639	533	0	83.41	16.59	EA-3	unnamed

nt, nucleotides

\*, not a WRLFMD reference number

Assembled with Report Generator v4.0

© Institute for Animal Health

# FAO World Reference Laboratory for FMD Genotyping Report

IAH-P-EP-MEG-FOR-005-3

Page 1 of 1

Serotype: O	Report date: 23/03/2011
WRLFMD Ref No: KEN/1/2011	Reported by: N.J. Knowles
Batch No: WRLFMD/2011/00008	Checked by: D.P. King
Sender Ref: K10/11 12.1.11	
Location: Thika West, Kenya	Topotype: EA-2
Date collected: 12/01/2011	Genotype/strain: Unnamed
Date received by WRLFMD: 09/02/2011	Sequence filename: KEN11-01.SEQ
Date received for sequencing: 16/03/2011	Date sequence last updated: 18/03/2011
Species: Cattle	No. of Nt determined: 639
Material used: BTy1	No. of ambiguities: 0
Region sequenced: VP1	Gene length: 639
RT-PCR primers: O-1C244F/EUR-2B52R	Total no. of comparisons: 2693
O-1C272F/EUR-2B52R	Min. no. of nt for comparison: 600
	Total turn-around time: 42 days
	Sequencing time: 7 days
Comments:	

Most Closely Related Viruses									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	O/KEN/148/2010	KEN10148	639	634	0	99.22	0.78	EA-2	Unnamed
2	O/KEN/152/2010	KEN10152	639	632	0	98.90	1.10	EA-2	Unnamed
3	O/K31/05* (HM756623)	KEN05-AB	639	612	0	95.77	4.23	EA-2	Unnamed
4	O/KEN/26/2005	KEN05-26	639	612	0	95.77	4.23	EA-2	unnamed
5	O/KEN/30/2004	KEN04-30	639	611	0	95.62	4.38	EA-2	unnamed
6	O/K6/07* (HM756630)	KEN07-AB	639	608	0	95.15	4.85	EA-2	Unnamed
7	O/KEN/6/2005	KEN05-06	639	608	0	95.15	4.85	EA-2	unnamed
8	O/KEN/7/2002	KEN02-07	639	608	0	95.15	4.85	EA-2	Unnamed
9	O/K2/07* (HM756629)	KEN07-AA	639	607	0	94.99	5.01	EA-2	Unnamed
10	O/KEN/3/2007	KEN07-03	639	607	0	94.99	5.01	EA-2	unnamed
Most Closely Related Reference Viruses									
(see <a href="http://www.wrlfmd.org/fmd_genotyping/prototypes.htm">http://www.wrlfmd.org/fmd_genotyping/prototypes.htm</a> )									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	O/KEN/5/2002 (DQ165073)	KEN02-05	639	593	0	92.80	7.20	EA-2	Unnamed
2	O/UGA/3/2002 (DQ165077)	UGA02-03	639	582	0	91.08	8.92	EA-2	unnamed
3	O/MAL/1/98 (DQ165074)	MAL98-01	639	573	0	89.67	10.33	EA-2	unnamed
4	O/TAN/2/2004	TAN04-02	639	573	0	89.67	10.33	EA-2	unnamed
5	O/K40/84*	KEN84-40	639	550	0	86.07	13.93	EA-1	unnamed
6	O/UAE/4/2008	UAE08-04	636	546	0	85.85	14.15	ME-SA	Ind-2001c
7	O/UKG/35/2001 (AJ539141)	UKG01-35	639	547	0	85.60	14.40	ME-SA	PanAsia
8	O/IRN/31/2009	IRN09-31	639	544	0	85.13	14.87	ME-SA	PanAsia-2 <sup>FAR-09</sup>
9	O/KUW/3/97 (DQ164904)	KUW97-03	639	544	0	85.13	14.87	ME-SA	Ind-2001a
10	O/OMN/7/2001 (DQ164941)	OMN01-07	639	544	0	85.13	14.87	ME-SA	Ind-2001b

nt, nucleotides

\*, not a WRLFMD reference number

Assembled with Report Generator v4.0

© Institute for Animal Health

# Report on FMDV O in Kenya in 2010-2011

Batch: WRLFMD/2011/00008

◆ indicates viruses in this batch

Software: MEGA 5.0

Analysis

----- Phylogeny Reconstruction

Scope ----- All Selected Taxa

Statistical Method ----- Neighbor-joining

Phylogeny Test

----- Bootstrap method

No. of Bootstrap Replications ----- 1000

Substitution Model

----- Nucleotide

Model/Method ----- Kimura 2-parameter model

Substitutions to Include ----- d: Transitions + Transversions

Rates and Patterns

----- Uniform rates

Pattern among Lineages ----- Same (Homogeneous)

Data Subset to Use

----- Pairwise deletion

Codons Included ----- 1st+2nd+3rd+Non-Coding

No. of Sites : 642

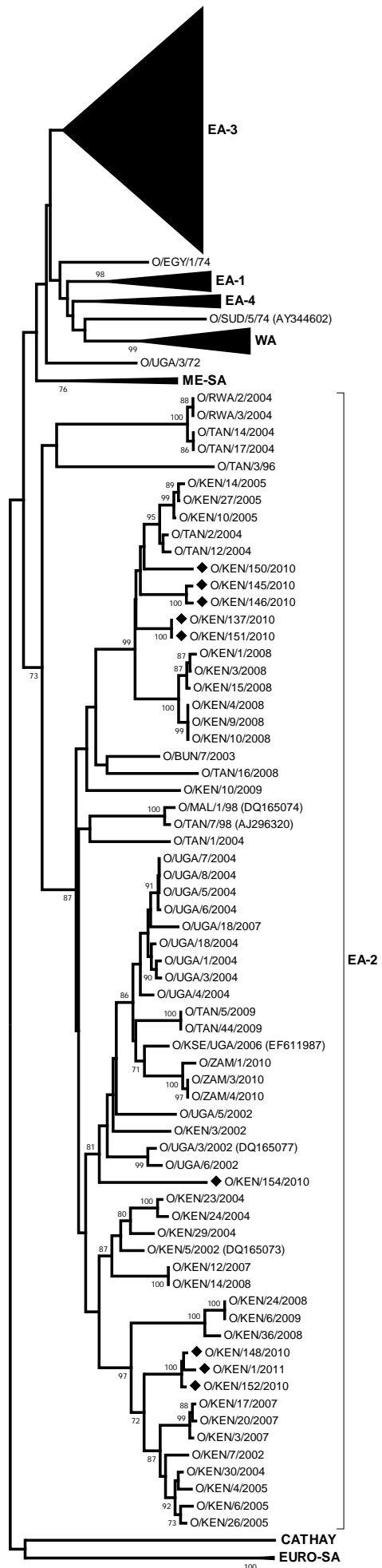
No Of Bootstrap Reps = 1000

Only bootstrap values of 70% and above are shown

\*, not a WRLFMD Ref. No.

N.J. Knowles & J. Wadsworth, 23 March 2011

© Institute for Animal Health



0.02