



**INSTITUTE FOR ANIMAL HEALTH**  
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## FMD Genotyping Report

Lab Reference WRL Batch Number: WRLFMD/2012/00032

Sender Details:

[REDACTED]

Date Received: 02/10/2012  
Country of Origin: EGYPT  
Date Reported: 6<sup>th</sup> November 2012

Dear General Organisation for Vet Services (GOVS),

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:

[Handwritten signature and [REDACTED]

Official Stamp:

[REDACTED]

Date:

6/11/12

[REDACTED]

A UKAS accredited testing laboratory No. 4025.

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: [trish.ryder@iah.ac.uk](mailto:trish.ryder@iah.ac.uk). IAH actively seeks and appreciates feedback, if you would like to offer feedback please complete the WRLFMD survey here: <http://www.surveymonkey.com/s/WRLFMD>

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

## Genotyping Report

Report Date for this Batch: 3 November 2012

FMDV type O

Country: Egypt

Period: 2012

No. of samples: 4

BATCH: WRLFMD/2012/00032



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# FAO World Reference Laboratory for FMD Genotyping Report

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Serotype: O WRLFMD Ref No: EGY/19/2012 Batch No: WRLFMD/2012/00032 Sender Ref: R/280 (3) Location: Al Zlefay, Zainia, Luxor, Upper Egypt, Egypt Date collected: 28/02/2012 Date received by WRLFMD: 02/10/2012 Date received for sequencing: 22/10/2012 Species: Cattle Material used: BTy1 Region sequenced: VP1 RT-PCR primers: O-1C244F/EUR-2B52R O-1C272F/EUR-2B52R	Report date: 03/11/2012 Reported by: N.J. Knowles Checked by: D.P. King Topotype: EA-3 Genotype/strain: unnamed Sequence filename: EGY12-19.SEQ Date sequence last updated: 02/11/2012 No. of Nt determined: 639 No. of ambiguities: 0 Gene length: 639 Total no. of comparisons: 3406 Min. no. of nt for comparison: 600 Total turn-around time: 32 days Sequencing time: 12 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/ERI/11/2011	ERI11-01	639	637	0	99.69	0.31	EA-3	unnamed
2	O/ERI/11/2011	ERI11-11	639	637	0	99.69	0.31	EA-3	unnamed
3	O/ERI/12/2011	ERI11-12	639	637	0	99.69	0.31	EA-3	unnamed
4	O/ERI/13/2011	ERI11-13	639	637	0	99.69	0.31	EA-3	unnamed
5	O/ERI/16/2011	ERI11-16	639	637	0	99.69	0.31	EA-3	unnamed
6	O/ERI/2/2011	ERI11-02	639	637	0	99.69	0.31	EA-3	unnamed
7	O/ERI/3/2011	ERI11-03	639	637	0	99.69	0.31	EA-3	unnamed
8	O/ETH/59/2011	ETH11-59	639	637	0	99.69	0.31	EA-3	unnamed
9	O/EGY/26/2012	EGY12-26	639	636	0	99.53	0.47	EA-3	unnamed
10	O/EGY/27/2012	EGY12-27	639	636	0	99.53	0.47	EA-3	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/SUD/2/86 (DQ165075)	SUD86-02	639	587	0	91.86	8.14	EA-3	unnamed
2	O/ETH/1/2007 (FJ798137)	ETH07-01	639	556	0	87.01	12.99	EA-3	unnamed
3	O/IND/53/79 (AF292107)	IND79A53	639	550	0	86.07	13.93	ME-SA	unnamed
4	O/MAL/1/98 (DQ165074)	MAL98-01	639	549	0	85.92	14.08	EA-2	unnamed
5	O/ETH/3/2004 (FJ798109)	ETH04-03	639	548	0	85.76	14.24	EA-3	unnamed
6	O/TAN/2/2004	TAN04-02	639	547	0	85.60	14.40	EA-2	unnamed
7	O/UGA/3/2002 (DQ165077)	UGA02-03	639	547	0	85.60	14.40	EA-2	unnamed
8	O/K83/79* (AJ303511)	KEN79B83	638	546	1	85.58	14.42	EA-1	unnamed
9	O/BHU/3/2009	BHU09-03	639	545	0	85.29	14.71	ME-SA	Ind-2001d
10	O/IRN/61/2001 (DQ164896)	IRN01-61	638	544	1	85.27	14.73	ME-SA	Irn-2001

nt, nucleotides

\*, not a WRLFMD reference number

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# FAO World Reference Laboratory for FMD Genotyping Report

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Serotype: O WRLFMD Ref No: EGY/25/2012 Batch No: WRLFMD/2012/00032 Sender Ref: R/469 (5) Location: Abo Z Reba, Saloum, Matrouh, Western, Egypt Date collected: 03/04/2012 Date received by WRLFMD: 02/10/2012 Date received for sequencing: 22/10/2012 Species: Sheep Material used: BTy1 Region sequenced: VP1 RT-PCR primers: O-1C244F/EUR-2B52R O-1C272F/EUR-2B52R	Report date: 03/11/2012 Reported by: N.J. Knowles Checked by: D.P. King  Topotype: EA-3 Genotype/strain: unnamed Sequence filename: EGY12-25.SEQ Date sequence last updated: 02/11/2012 No. of Nt determined: 639 No. of ambiguities: 0 Gene length: 639 Total no. of comparisons: 3406 Min. no. of nt for comparison: 600 Total turn-around time: 32 days Sequencing time: 12 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/LIB/54/2012	LIB12-54	639	639	0	100.00	0.00	EA-3	unnamed
2	O/ERI/1/2011	ERI11-01	639	637	0	99.69	0.31	EA-3	unnamed
3	O/ERI/11/2011	ERI11-11	639	637	0	99.69	0.31	EA-3	unnamed
4	O/ERI/12/2011	ERI11-12	639	637	0	99.69	0.31	EA-3	unnamed
5	O/ERI/13/2011	ERI11-13	639	637	0	99.69	0.31	EA-3	unnamed
6	O/ERI/16/2011	ERI11-16	639	637	0	99.69	0.31	EA-3	unnamed
7	O/ERI/2/2011	ERI11-02	639	637	0	99.69	0.31	EA-3	unnamed
8	O/ERI/3/2011	ERI11-03	639	637	0	99.69	0.31	EA-3	unnamed
9	O/ETH/59/2011	ETH11-59	639	637	0	99.69	0.31	EA-3	unnamed
10	O/EGY/26/2012	EGY12-26	639	636	0	99.53	0.47	EA-3	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/SUD/2/86 (DQ165075)	SUD86-02	639	587	0	91.86	8.14	EA-3	unnamed
2	O/ETH/1/2007 (FJ798137)	ETH07-01	639	556	0	87.01	12.99	EA-3	unnamed
3	O/ETH/3/2004 (FJ798109)	ETH04-03	639	550	0	86.07	13.93	EA-3	unnamed
4	O/IND/53/79 (AF292107)	IND79A53	639	550	0	86.07	13.93	ME-SA	unnamed
5	O/MAL/1/98 (DQ165074)	MAL98-01	639	549	0	85.92	14.08	EA-2	unnamed
6	O/TAN/2/2004	TAN04-02	639	549	0	85.92	14.08	EA-2	unnamed
7	O/BHU/3/2009	BHU09-03	639	547	0	85.60	14.40	ME-SA	Ind-2001d
8	O/UGA/3/2002 (DQ165077)	UGA02-03	639	547	0	85.60	14.40	EA-2	unnamed
9	O/IRN/61/2001 (DQ164896)	IRN01-61	638	546	1	85.58	14.42	ME-SA	Irn-2001
10	O/K83/79* (AJ303511)	KEN79B83	638	546	1	85.58	14.42	EA-1	unnamed

nt, nucleotides

\*, not a WRLFMD reference number

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# FAO World Reference Laboratory for FMD Genotyping Report

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Serotype: O WRLFMD Ref No: EGY/26/2012 Batch No: WRLFMD/2012/00032 Sender Ref: R/529 (6) Location: Gazala, El Dabha, Matrouh, Western, Egypt Date collected: 25/04/2012 Date received by WRLFMD: 02/10/2012 Date received for sequencing: 22/10/2012 Species: Sheep Material used: BTy1 Region sequenced: VP1 RT-PCR primers: O-1C244F/EUR-2B52R O-1C272F/EUR-2B52R	Report date: 03/11/2012 Reported by: N.J. Knowles Checked by: D.P. King Topotype: EA-3 Genotype/strain: unnamed Sequence filename: EGY12-26.SEQ Date sequence last updated: 02/11/2012 No. of Nt determined: 639 No. of ambiguities: 0 Gene length: 639 Total no. of comparisons: 3406 Min. no. of nt for comparison: 600 Total turn-around time: 32 days Sequencing time: 12 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/ERI/1/2011	ERI11-01	639	638	0	99.84	0.16	EA-3	unnamed
2	O/ERI/11/2011	ERI11-11	639	638	0	99.84	0.16	EA-3	unnamed
3	O/ERI/12/2011	ERI11-12	639	638	0	99.84	0.16	EA-3	unnamed
4	O/ERI/13/2011	ERI11-13	639	638	0	99.84	0.16	EA-3	unnamed
5	O/ERI/16/2011	ERI11-16	639	638	0	99.84	0.16	EA-3	unnamed
6	O/ERI/2/2011	ERI11-02	639	638	0	99.84	0.16	EA-3	unnamed
7	O/ERI/3/2011	ERI11-03	639	638	0	99.84	0.16	EA-3	unnamed
8	O/ETH/59/2011	ETH11-59	639	638	0	99.84	0.16	EA-3	unnamed
9	O/EGY/27/2012	EGY12-27	639	637	0	99.69	0.31	EA-3	unnamed
10	O/ERI/14/2011	ERI11-14	639	637	0	99.69	0.31	EA-3	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/SUD/2/86 (DQ165075)	SUD86-02	639	588	0	92.02	7.98	EA-3	unnamed
2	O/ETH/1/2007 (FJ798137)	ETH07-01	639	557	0	87.17	12.83	EA-3	unnamed
3	O/IND/53/79 (AF292107)	IND79A53	639	551	0	86.23	13.77	ME-SA	unnamed
4	O/MAL/1/98 (DQ165074)	MAL98-01	639	550	0	86.07	13.93	EA-2	unnamed
5	O/K83/79* (AJ303511)	KEN79B83	638	549	1	86.05	13.95	EA-1	unnamed
6	O/ETH/3/2004 (FJ798109)	ETH04-03	639	549	0	85.92	14.08	EA-3	unnamed
7	O/TAN/2/2004	TAN04-02	639	548	0	85.76	14.24	EA-2	unnamed
8	O/UGA/3/2002 (DQ165077)	UGA02-03	639	548	0	85.76	14.24	EA-2	unnamed
9	O/BHU/3/2009	BHU09-03	639	546	0	85.45	14.55	ME-SA	Ind-2001d
10	O/IRN/61/2001 (DQ164896)	IRN01-61	638	545	1	85.42	14.58	ME-SA	Irn-2001

nt, nucleotides

\*, not a WRLFMD reference number

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# FAO World Reference Laboratory for FMD Genotyping Report

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Serotype: O WRLFMD Ref No: EGY/27/2012 Batch No: WRLFMD/2012/00032 Sender Ref: RL/3 (7) Location: Abo Greda, Faras Qour, Domyat, Delta, Egypt Date collected: 08/05/2012 Date received by WRLFMD: 02/10/2012 Date received for sequencing: 22/10/2012 Species: Cattle Material used: BTy1 Region sequenced: VP1 RT-PCR primers: O-1C244F/EUR-2B52R O-1C272F/EUR-2B52R	Report date: 03/11/2012 Reported by: N.J. Knowles Checked by: D.P. King Topotype: EA-3 Genotype/strain: unnamed Sequence filename: EGY12-27.SEQ Date sequence last updated: 02/11/2012 No. of Nt determined: 639 No. of ambiguities: 0 Gene length: 639 Total no. of comparisons: 3406 Min. no. of nt for comparison: 600 Total turn-around time: 32 days Sequencing time: 12 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/ERI/1/2011	ERI11-01	639	638	0	99.84	0.16	EA-3	unnamed
2	O/ERI/11/2011	ERI11-11	639	638	0	99.84	0.16	EA-3	unnamed
3	O/ERI/12/2011	ERI11-12	639	638	0	99.84	0.16	EA-3	unnamed
4	O/ERI/13/2011	ERI11-13	639	638	0	99.84	0.16	EA-3	unnamed
5	O/ERI/16/2011	ERI11-16	639	638	0	99.84	0.16	EA-3	unnamed
6	O/ERI/2/2011	ERI11-02	639	638	0	99.84	0.16	EA-3	unnamed
7	O/ERI/3/2011	ERI11-03	639	638	0	99.84	0.16	EA-3	unnamed
8	O/ETH/59/2011	ETH11-59	639	638	0	99.84	0.16	EA-3	unnamed
9	O/EGY/26/2012	EGY12-26	639	637	0	99.69	0.31	EA-3	unnamed
10	O/ERI/14/2011	ERI11-14	639	637	0	99.69	0.31	EA-3	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/SUD/2/86 (DQ165075)	SUD86-02	639	588	0	92.02	7.98	EA-3	unnamed
2	O/ETH/1/2007 (FJ798137)	ETH07-01	639	557	0	87.17	12.83	EA-3	unnamed
3	O/IND/53/79 (AF292107)	IND79A53	639	551	0	86.23	13.77	ME-SA	unnamed
4	O/MAL/1/98 (DQ165074)	MAL98-01	639	550	0	86.07	13.93	EA-2	unnamed
5	O/ETH/3/2004 (FJ798109)	ETH04-03	639	549	0	85.92	14.08	EA-3	unnamed
6	O/BHU/3/2009	BHU09-03	639	548	0	85.76	14.24	ME-SA	Ind-2001d
7	O/TAN/2/2004	TAN04-02	639	548	0	85.76	14.24	EA-2	unnamed
8	O/UGA/3/2002 (DQ165077)	UGA02-03	639	548	0	85.76	14.24	EA-2	unnamed
9	O/K83/79* (AJ303511)	KEN79B83	638	547	1	85.74	14.26	EA-1	unnamed
10	O/IRN/61/2001 (DQ164896)	IRN01-61	638	545	1	85.42	14.58	ME-SA	Irn-2001

nt, nucleotides

\*, not a WRLFMD reference number

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# Report on FMDV O in Egypt in 2012

Batch: WRLFMD/2012/00032

◆ indicates viruses in this batch

Software: MEGA 5.0

Analysis

Analysis ----- Phylogeny Reconstruction

Scope ----- All Selected Taxa

Statistical Method ----- Neighbor-joining

Phylogeny Test

Test of Phylogeny ----- Bootstrap method

No. of Bootstrap Replications ----- 1000

Substitution Model

Substitutions Type ----- Nucleotide

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

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

Rates and Patterns

Rates among Sites ----- Uniform rates

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

Data Subset to Use

Gaps/Missing Data Treatment ----- Pairwise deletion

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

No. of Sites : 642

No Of Bootstrap Reps = 1000

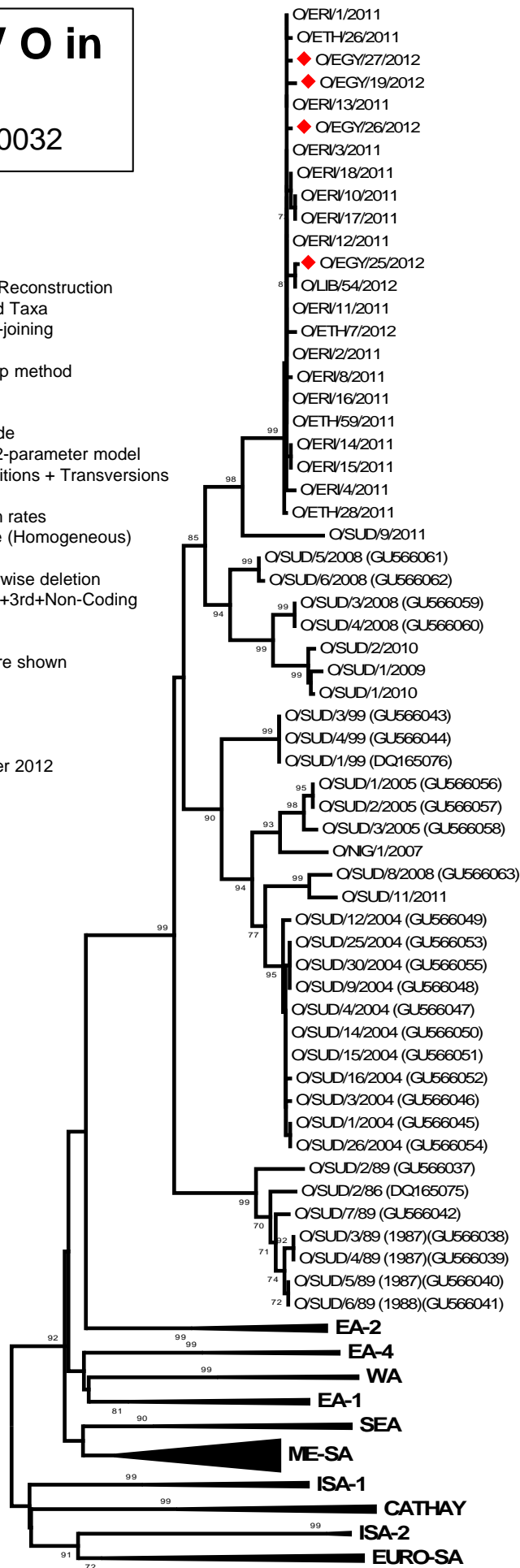
Only bootstrap values of 70% and above are shown

\*, not a WRLFMD Ref. No.

N.J. Knowles & J. Wadsworth, 03 November 2012

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EA-3

0.02