



**INSTITUTE FOR ANIMAL HEALTH**  
Director: Professor John Fazakerley BSc, MBA, PhD, FRCPath  
PIRBRIGHT LABORATORY  
Ash Road,  
Pirbright,  
Surrey,  
GU24 0NF  
Intn Tel: 00 44 1483 232441  
Tel: 01483 232441, Fax: 01483 232621

## 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:

[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 A

Country: Egypt

Period: 2012

No. of samples: 3

BATCH: WRLFMD/2012/00032



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# FAO World Reference Laboratory for FMD Genotyping Report

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Serotype: A WRLFMD Ref No: EGY/18/2012 Batch No: WRLFMD/2012/00032 Sender Ref: R/280 (2) Location: Al Zlefay, Zainia, Luxor, Upper Egypt, Egypt Date collected: 09/03/2012 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: A-1C562F/EUR-2B52R A-1C612F/EUR-2B52R	Report date: 03/11/2012 Reported by: N.J. Knowles Checked by: D.P. King  Topotype: AFRICA Genotype/strain: G-IV Sequence filename: EGY12-18.SEQ Date sequence last updated: 02/11/2012 No. of Nt determined: 639 No. of ambiguities: 0 Gene length: 639 Total no. of comparisons: 1503 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	A/EGY/20/2012	EGY12-20	639	639	0	100.00	0.00	AFRICA	G-IV
2	A/SUD/13/2011	SUD11-13	639	634	0	99.22	0.78	AFRICA	G-IV
3	A/SUD/12/2011	SUD11A12	639	633	0	99.06	0.94	AFRICA	G-IV
4	A/SUD/12/2011	SUD11B12	639	633	0	99.06	0.94	AFRICA	G-IV
5	A/SUD/12/2011	SUD11C12	639	633	0	99.06	0.94	AFRICA	G-IV
6	A/SUD/12/2011	SUD11D12	639	633	0	99.06	0.94	AFRICA	G-IV
7	A/SUD/7/2011	SUD11A07	639	633	0	99.06	0.94	AFRICA	G-IV
8	A/SUD/7/2011	SUD11B07	639	633	0	99.06	0.94	AFRICA	G-IV
9	A/SUD/6/2011	SUD11-06	639	632	0	98.90	1.10	AFRICA	G-IV
10	A/EGY/1/2012	EGY12-01	639	627	0	98.12	1.88	AFRICA	G-IV
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	A/SUD/3/77 (GU566064)	SUD77-03	639	552	0	86.38	13.62	AFRICA	G-IV
2	A/GHA/16/73	GHA73-16	636	538	0	84.59	15.41	AFRICA	G-VI
3	A21/Lumbwa/KEN/64 (AY593761)	KEN64-AA	639	535	0	83.72	16.28	AFRICA	G-III
4	A/KEN/42/66 (K18/66)	KEN66-42	639	533	0	83.41	16.59	AFRICA	G-I
5	A/UGA/13/66	UGA66-13	639	533	0	83.41	16.59	AFRICA	G-VII
6	A/NGR/2/73	NGR73-02	639	532	0	83.26	16.74	AFRICA	G-V
7	A/EGY/1/72 (EF208756)	EGY72-01	639	519	0	81.22	18.78	AFRICA	G-II
8	A12/UK/119/32 (M10975)	UKG32119	639	519	0	81.22	18.78	EURO-SA	A <sub>12</sub>
9	A23/Kitale/KEN/64 (AY593766)	KEN64-AB	639	517	0	80.91	19.09	AFRICA	G-VIII
10	A5/Allier/FRA/60 (AY593780)	FRA60--F	636	511	0	80.35	19.65	EURO-SA	A <sub>5</sub>

nt, nucleotides

\*, not a WRLFMD reference number

Assembled with Report Generator v4.1

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# FAO World Reference Laboratory for FMD Genotyping Report

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Serotype: A WRLFMD Ref No: EGY/20/2012 Batch No: WRLFMD/2012/00032 Sender Ref: R/279 (1) Location: Hamaden, Zainia, Luxor, Upper Egypt, Egypt Date collected: 09/03/2012 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: A-1C562F/EUR-2B52R A-1C612F/EUR-2B52R	Report date: 03/11/2012 Reported by: N.J. Knowles Checked by: D.P. King Topotype: AFRICA Genotype/strain: G-IV Sequence filename: EGY12-20.SEQ Date sequence last updated: 02/11/2012 No. of Nt determined: 639 No. of ambiguities: 0 Gene length: 639 Total no. of comparisons: 1503 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	A/EGY/18/2012	EGY12-18	639	639	0	100.00	0.00	AFRICA	G-IV
2	A/SUD/13/2011	SUD11-13	639	634	0	99.22	0.78	AFRICA	G-IV
3	A/SUD/12/2011	SUD11A12	639	633	0	99.06	0.94	AFRICA	G-IV
4	A/SUD/12/2011	SUD11B12	639	633	0	99.06	0.94	AFRICA	G-IV
5	A/SUD/12/2011	SUD11C12	639	633	0	99.06	0.94	AFRICA	G-IV
6	A/SUD/12/2011	SUD11D12	639	633	0	99.06	0.94	AFRICA	G-IV
7	A/SUD/7/2011	SUD11A07	639	633	0	99.06	0.94	AFRICA	G-IV
8	A/SUD/7/2011	SUD11B07	639	633	0	99.06	0.94	AFRICA	G-IV
9	A/SUD/6/2011	SUD11-06	639	632	0	98.90	1.10	AFRICA	G-IV
10	A/EGY/1/2012	EGY12-01	639	627	0	98.12	1.88	AFRICA	G-IV
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	A/SUD/3/77 (GU566064)	SUD77-03	639	552	0	86.38	13.62	AFRICA	G-IV
2	A/GHA/16/73	GHA73-16	636	538	0	84.59	15.41	AFRICA	G-VI
3	A21/Lumbwa/KEN/64 (AY593761)	KEN64-AA	639	535	0	83.72	16.28	AFRICA	G-III
4	A/KEN/42/66 (K18/66)	KEN66-42	639	533	0	83.41	16.59	AFRICA	G-I
5	A/UGA/13/66	UGA66-13	639	533	0	83.41	16.59	AFRICA	G-VII
6	A/NGR/2/73	NGR73-02	639	532	0	83.26	16.74	AFRICA	G-V
7	A/EGY/1/72 (EF208756)	EGY72-01	639	519	0	81.22	18.78	AFRICA	G-II
8	A12/UK/119/32 (M10975)	UKG32119	639	519	0	81.22	18.78	EURO-SA	A <sub>12</sub>
9	A23/Kitale/KEN/64 (AY593766)	KEN64-AB	639	517	0	80.91	19.09	AFRICA	G-VIII
10	A5/Allier/FRA/60 (AY593780)	FRA60--F	636	511	0	80.35	19.65	EURO-SA	A <sub>5</sub>

nt, nucleotides

\*, not a WRLFMD reference number

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# FAO World Reference Laboratory for FMD Genotyping Report

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Serotype: A	Report date: 03/11/2012
WRLFMD Ref No: EGY/30/2012	Reported by: N.J. Knowles
Batch No: WRLFMD/2012/00032	Checked by: D.P. King
Sender Ref: RL/36 (4)	
Location: Dina Farm, Giza, Delta, Egypt	Topotype: AFRICA
Date collected: 19/05/2012	Genotype/strain: G-IV
Date received by WRLFMD: 02/10/2012	Sequence filename: EGY12-30.SEQ
Date received for sequencing: 22/10/2012	Date sequence last updated: 02/11/2012
Species: Cattle	No. of Nt determined: 639
Material used: BTy1	No. of ambiguities: 0
Region sequenced: VP1	Gene length: 639
RT-PCR primers: A-1C562F/EUR-2B52R	Total no. of comparisons: 1503
A-1C612F/EUR-2B52R	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	A/EGY-5-2012*	EGY12-AC	639	638	0	99.84	0.16	AFRICA	G-IV
2	A/EGY/1/2012	EGY12-01	639	631	0	98.75	1.25	AFRICA	G-IV
3	A/EGY-B-2012*	EGY12-AB	639	631	0	98.75	1.25	AFRICA	G-IV
4	A/SUD/13/2011	SUD11-13	639	624	0	97.65	2.35	AFRICA	G-IV
5	A/EGY/18/2012	EGY12-18	639	623	0	97.50	2.50	AFRICA	G-IV
6	A/EGY/20/2012	EGY12-20	639	623	0	97.50	2.50	AFRICA	G-IV
7	A/SUD/12/2011	SUD11A12	639	623	0	97.50	2.50	AFRICA	G-IV
8	A/SUD/12/2011	SUD11B12	639	623	0	97.50	2.50	AFRICA	G-IV
9	A/SUD/12/2011	SUD11C12	639	623	0	97.50	2.50	AFRICA	G-IV
10	A/SUD/12/2011	SUD11D12	639	623	0	97.50	2.50	AFRICA	G-IV
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	A/SUD/3/77 (GU566064)	SUD77-03	639	544	0	85.13	14.87	AFRICA	G-IV
2	A/GHA/16/73	GHA73-16	636	530	0	83.33	16.67	AFRICA	G-VI
3	A/KEN/42/66 (K18/66)	KEN66-42	639	528	0	82.63	17.37	AFRICA	G-I
4	A21/Lumbwa/KEN/64 (AY593761)	KEN64-AA	639	527	0	82.47	17.53	AFRICA	G-III
5	A/NGR/2/73	NGR73-02	639	524	0	82.00	18.00	AFRICA	G-V
6	A/UGA/13/66	UGA66-13	639	524	0	82.00	18.00	AFRICA	G-VII
7	A12/UK/119/32 (M10975)	UKG32119	639	512	0	80.13	19.87	EURO-SA	A <sub>12</sub>
8	A/EGY/1/72 (EF208756)	EGY72-01	639	511	0	79.97	20.03	AFRICA	G-II
9	A23/Kitale/KEN/64 (AY593766)	KEN64-AB	639	510	0	79.81	20.19	AFRICA	G-VIII
10	A5/Allier/FRA/60 (AY593780)	FRA60--F	636	504	0	79.25	20.75	EURO-SA	A <sub>5</sub>

nt, nucleotides

\*, not a WRLFMD reference number

Assembled with Report Generator v4.1

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# Report on FMDV A 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 : 639

No Of Bootstrap Reps = 1000

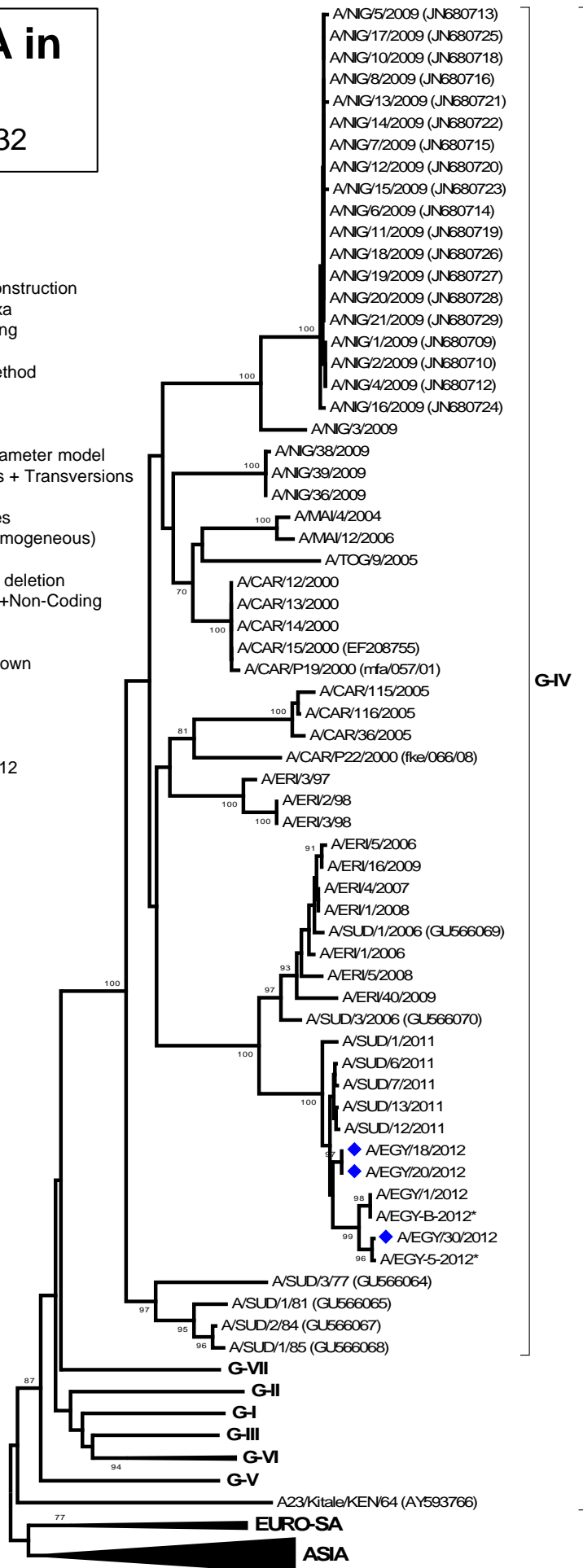
Only bootstrap values of 70% and above are shown

\*, not a WRLFMD Ref. No.

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

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0.02