

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

## Genotyping Report

Report Date for this Batch: 10 July 2014

FMDV type A

Country: Nigeria

Period: 2011-2013

No. of samples: 9

BATCH: WRLFMD/2014/00016



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

© The Pirbright Institute

# FAO World Reference Laboratory for FMD Genotyping Report

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

Page 1 of 1

Serotype: A	Report date: 10/07/2014
WRLFMD Ref No: NIG/2/2011	Reported by: N.J. Knowles
Batch No: WRLFMD/2014/00016	Checked by: K. Bachanek-Bankowska
Sender Ref: KG/M5	
Location: (Oke Buku?), Kogi State, Nigeria	Topotype: AFRICA
Date collected: 26/06/2011	Genotype/strain: G-IV
Date received by WRLFMD: 11/04/2014	Sequence filename: NIG11-02.SEQ
Date received for sequencing: 02/05/2014	Date sequence last updated: 09/05/2014
Species: Bovine	No. of Nt determined: 639
Material used: BTy2 26/04/2014	No. of ambiguities: 0
Region sequenced: VP1	Gene length: 639
RT-PCR primers: A-1C562F/EUR-2B52R	Total no. of comparisons: 1953
A-1C612F/EUR-2B52R	Min. no. of nt for comparison: 600
	Total turn-around time: 90 days
	Sequencing time: 69 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/NIG/9/2012	NIG12-09	639	632	0	98.90	1.10	AFRICA	G-IV
2	A/NIG/36/2009	NIG09-36	639	619	0	96.87	3.13	AFRICA	G-IV
3	A/NIG/39/2009	NIG09-39	639	619	0	96.87	3.13	AFRICA	G-IV
4	A/NIG/38/2009	NIG09-38	639	618	0	96.71	3.29	AFRICA	G-IV
5	A/NIG/10/2012	NIG12-10	639	610	0	95.46	4.54	AFRICA	G-IV
6	A/NIG/8/2012	NIG12-08	639	609	0	95.31	4.69	AFRICA	G-IV
7	A/NIG/12/2012	NIG12-12	639	608	0	95.15	4.85	AFRICA	G-IV
8	A/NIG/6/2013	NIG13-06	639	608	0	95.15	4.85	AFRICA	G-IV
9	A/NIG/8/2013	NIG13-08	639	608	0	95.15	4.85	AFRICA	G-IV
10	A/NIG/7/2013	NIG13-07	639	606	0	94.84	5.16	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	560	0	87.64	12.36	AFRICA	G-IV
2	A/KEN/42/66 (K18/66)(KF561699)	KEN66-42	639	538	0	84.19	15.81	AFRICA	G-I
3	A/UGA/13/66 (KF561705)	UGA66-13	639	536	0	83.88	16.12	AFRICA	G-VII
4	A21/Lumbwa/KEN/64 (AY593761)	KEN64-AA	639	534	0	83.57	16.43	AFRICA	G-III
5	A/EGY/1/72 (EF208756)	EGY72-01	639	531	0	83.10	16.90	AFRICA	G-II
6	A/NGR/2/73 (KF561704)	NGR73-02	639	529	0	82.79	17.21	AFRICA	G-V
7	A/GHA/16/73 (KF561698)	GHA73-16	636	526	0	82.70	17.30	AFRICA	G-VI
8	A12/UK/119/32 (M10975)	UKG32119	639	520	0	81.38	18.62	EURO-SA	A <sub>12</sub>
9	A5/Allier/FRA/60 (AY593780)	FRA60--F	636	514	0	80.82	19.18	EURO-SA	A <sub>5</sub>
10	A15/Bangkok/TAI/60 (AY593755)	TAI60--D	639	515	0	80.59	19.41	ASIA	A15

nt, nucleotides

\*, not a WRLFMD reference number

Assembled with Report Generator v4.3

© The Pirbright Institute (not to be reproduced without permission)

# FAO World Reference Laboratory for FMD Genotyping Report

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

Page 1 of 1

Serotype: A WRLFMD Ref No: NIG/8/2012 Batch No: WRLFMD/2014/00016 Sender Ref: PL/BLD/02B Location: Barakin Ladi, Plateau State, Nigeria Date collected: 06/11/2012 Date received by WRLFMD: 11/04/2014 Date received for sequencing: 30/06/2014 Species: Bovine Material used: BTy1 19/06/2014 Region sequenced: VP1 RT-PCR primers: A-1C562F/EUR-2B52R A-1C612F/EUR-2B52R	Report date: 10/07/2014 Reported by: N.J. Knowles Checked by: K. Bachanek-Bankowska Topotype: AFRICA Genotype/strain: G-IV Sequence filename: NIG12-08.SEQ Date sequence last updated: 02/07/2014 No. of Nt determined: 639 No. of ambiguities: 0 Gene length: 639 Total no. of comparisons: 1953 Min. no. of nt for comparison: 600 Total turn-around time: 90 days Sequencing time: 10 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	A/NIG/10/2012	NIG12-10	639	638	0	99.84	0.16	AFRICA	G-IV
2	A/NIG/36/2009	NIG09-36	639	614	0	96.09	3.91	AFRICA	G-IV
3	A/NIG/39/2009	NIG09-39	639	614	0	96.09	3.91	AFRICA	G-IV
4	A/NIG/38/2009	NIG09-38	639	613	0	95.93	4.07	AFRICA	G-IV
5	A/NIG/2/2011	NIG11-02	639	609	0	95.31	4.69	AFRICA	G-IV
6	A/NIG/12/2012	NIG12-12	639	608	0	95.15	4.85	AFRICA	G-IV
7	A/NIG/8/2013	NIG13-08	639	606	0	94.84	5.16	AFRICA	G-IV
8	A/NIG/6/2013	NIG13-06	639	605	0	94.68	5.32	AFRICA	G-IV
9	A/NIG/3/2013	NIG13-03	639	604	0	94.52	5.48	AFRICA	G-IV
10	A/NIG/7/2013	NIG13-07	639	604	0	94.52	5.48	AFRICA	G-IV
<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	A/SUD/3/77 (GU566064)	SUD77-03	639	557	0	87.17	12.83	AFRICA	G-IV
2	A/KEN/42/66 (K18/66)(KF561699)	KEN66-42	639	537	0	84.04	15.96	AFRICA	G-I
3	A/UGA/13/66 (KF561705)	UGA66-13	639	537	0	84.04	15.96	AFRICA	G-VII
4	A12/UK/119/32 (M10975)	UKG32119	639	535	0	83.72	16.28	EURO-SA	A <sub>12</sub>
5	A/GHA/16/73 (KF561698)	GHA73-16	636	532	0	83.65	16.35	AFRICA	G-VI
6	A21/Lumbwa/KEN/64 (AY593761)	KEN64-AA	639	531	0	83.10	16.90	AFRICA	G-III
7	A/EGY/1/72 (EF208756)	EGY72-01	639	529	0	82.79	17.21	AFRICA	G-II
8	A/NGR/2/73 (KF561704)	NGR73-02	639	526	0	82.32	17.68	AFRICA	G-V
9	A5/Allier/FRA/60 (AY593780)	FRA60--F	636	522	0	82.08	17.92	EURO-SA	A <sub>5</sub>
10	A/IRN/2/87 (EF208770)	IRN87-02	636	519	0	81.60	18.40	ASIA	Iran-87

nt, nucleotides

\*, not a WRLFMD reference number

Assembled with Report Generator v4.3

© The Pirbright Institute (not to be reproduced without permission)

# FAO World Reference Laboratory for FMD Genotyping Report

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

Page 1 of 1

Serotype: A	Report date: 10/07/2014
WRLFMD Ref No: NIG/9/2012	Reported by: N.J. Knowles
Batch No: WRLFMD/2014/00016	Checked by: K. Bachanek-Bankowska
Sender Ref: PL/BLD/01A	
Location: Barakin Ladi, Plateau State, Nigeria	Topotype: AFRICA
Date collected: 06/11/2012	Genotype/strain: G-IV
Date received by WRLFMD: 11/04/2014	Sequence filename: NIG12-09.SEQ
Date received for sequencing: 08/07/2014	Date sequence last updated: 09/07/2014
Species: Bovine	No. of Nt determined: 639
Material used: BTy2 26/06/2014	No. of ambiguities: 0
Region sequenced: VP1	Gene length: 639
RT-PCR primers: A-1C562F/EUR-2B52R	Total no. of comparisons: 1953
A-1C612F/EUR-2B52R	Min. no. of nt for comparison: 600
	Total turn-around time: 90 days
	Sequencing time: 2 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/NIG/2/2011	NIG11-02	639	632	0	98.90	1.10	AFRICA	G-IV
2	A/NIG/36/2009	NIG09-36	639	612	0	95.77	4.23	AFRICA	G-IV
3	A/NIG/39/2009	NIG09-39	639	612	0	95.77	4.23	AFRICA	G-IV
4	A/NIG/38/2009	NIG09-38	639	611	0	95.62	4.38	AFRICA	G-IV
5	A/NIG/10/2012	NIG12-10	639	605	0	94.68	5.32	AFRICA	G-IV
6	A/NIG/8/2012	NIG12-08	639	604	0	94.52	5.48	AFRICA	G-IV
7	A/NIG/12/2012	NIG12-12	639	601	0	94.05	5.95	AFRICA	G-IV
8	A/NIG/6/2013	NIG13-06	639	601	0	94.05	5.95	AFRICA	G-IV
9	A/NIG/8/2013	NIG13-08	639	601	0	94.05	5.95	AFRICA	G-IV
10	A/NIG/7/2013	NIG13-07	639	599	0	93.74	6.26	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	554	0	86.70	13.30	AFRICA	G-IV
2	A/KEN/42/66 (K18/66)(KF561699)	KEN66-42	639	538	0	84.19	15.81	AFRICA	G-I
3	A/UGA/13/66 (KF561705)	UGA66-13	639	532	0	83.26	16.74	AFRICA	G-VII
4	A21/Lumbwa/KEN/64 (AY593761)	KEN64-AA	639	531	0	83.10	16.90	AFRICA	G-III
5	A/EGY/1/72 (EF208756)	EGY72-01	639	529	0	82.79	17.21	AFRICA	G-II
6	A/GHA/16/73 (KF561698)	GHA73-16	636	526	0	82.70	17.30	AFRICA	G-VI
7	A/NGR/2/73 (KF561704)	NGR73-02	639	527	0	82.47	17.53	AFRICA	G-V
8	A12/UK/119/32 (M10975)	UKG32119	639	516	0	80.75	19.25	EURO-SA	A <sub>12</sub>
9	A15/Bangkok/TAI/60 (AY593755)	TAI60--D	639	516	0	80.75	19.25	ASIA	A15
10	A5/Allier/FRA/60 (AY593780)	FRA60--F	636	512	0	80.50	19.50	EURO-SA	A <sub>5</sub>

nt, nucleotides

\*, not a WRLFMD reference number

Assembled with Report Generator v4.3

© The Pirbright Institute (not to be reproduced without permission)

# FAO World Reference Laboratory for FMD Genotyping Report

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

Page 1 of 1

Serotype: A WRLFMD Ref No: NIG/10/2012 Batch No: WRLFMD/2014/00016 Sender Ref: PL/BLD/01B Location: Barakin Ladi, Plateau State, Nigeria Date collected: 06/11/2012 Date received by WRLFMD: 11/04/2014 Date received for sequencing: 30/06/2014 Species: Bovine Material used: BTy1 24/06/2014 Region sequenced: VP1 RT-PCR primers: A-1C562F/EUR-2B52R A-1C612F/EUR-2B52R	Report date: 10/07/2014 Reported by: N.J. Knowles Checked by: K. Bachanek-Bankowska Topotype: AFRICA Genotype/strain: G-IV Sequence filename: NIG12-10.SEQ Date sequence last updated: 02/07/2014 No. of Nt determined: 639 No. of ambiguities: 0 Gene length: 639 Total no. of comparisons: 1953 Min. no. of nt for comparison: 600 Total turn-around time: 90 days Sequencing time: 10 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/NIG/8/2012	NIG12-08	639	638	0	99.84	0.16	AFRICA	G-IV
2	A/NIG/36/2009	NIG09-36	639	614	0	96.09	3.91	AFRICA	G-IV
3	A/NIG/39/2009	NIG09-39	639	614	0	96.09	3.91	AFRICA	G-IV
4	A/NIG/38/2009	NIG09-38	639	613	0	95.93	4.07	AFRICA	G-IV
5	A/NIG/2/2011	NIG11-02	639	610	0	95.46	4.54	AFRICA	G-IV
6	A/NIG/12/2012	NIG12-12	639	609	0	95.31	4.69	AFRICA	G-IV
7	A/NIG/8/2013	NIG13-08	639	607	0	94.99	5.01	AFRICA	G-IV
8	A/NIG/6/2013	NIG13-06	639	606	0	94.84	5.16	AFRICA	G-IV
9	A/NIG/3/2013	NIG13-03	639	605	0	94.68	5.32	AFRICA	G-IV
10	A/NIG/7/2013	NIG13-07	639	605	0	94.68	5.32	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	558	0	87.32	12.68	AFRICA	G-IV
2	A/KEN/42/66 (K18/66)(KF561699)	KEN66-42	639	538	0	84.19	15.81	AFRICA	G-I
3	A/UGA/13/66 (KF561705)	UGA66-13	639	538	0	84.19	15.81	AFRICA	G-VII
4	A/GHA/16/73 (KF561698)	GHA73-16	636	533	0	83.81	16.19	AFRICA	G-VI
5	A12/UK/119/32 (M10975)	UKG32119	639	534	0	83.57	16.43	EURO-SA	A <sub>12</sub>
6	A21/Lumbwa/KEN/64 (AY593761)	KEN64-AA	639	532	0	83.26	16.74	AFRICA	G-III
7	A/EGY/1/72 (EF208756)	EGY72-01	639	530	0	82.94	17.06	AFRICA	G-II
8	A/NGR/2/73 (KF561704)	NGR73-02	639	527	0	82.47	17.53	AFRICA	G-V
9	A5/Allier/FRA/60 (AY593780)	FRA60--F	636	521	0	81.92	18.08	EURO-SA	A <sub>5</sub>
10	A/IRN/2/87 (EF208770)	IRN87-02	636	518	0	81.45	18.55	ASIA	Iran-87

nt, nucleotides

\*, not a WRLFMD reference number

Assembled with Report Generator v4.3

© The Pirbright Institute (not to be reproduced without permission)

# FAO World Reference Laboratory for FMD Genotyping Report

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

Page 1 of 1

Serotype: A	Report date: 10/07/2014
WRLFMD Ref No: NIG/12/2012	Reported by: N.J. Knowles
Batch No: WRLFMD/2014/00016	Checked by: K. Bachanek-Bankowska
Sender Ref: KD/KAU/01	
Location: Kaura, Kaduna State, Nigeria	Topotype: AFRICA
Date collected: 13/11/2012	Genotype/strain: G-IV
Date received by WRLFMD: 11/04/2014	Sequence filename: NIG12-12.SEQ
Date received for sequencing: 04/07/2014	Date sequence last updated: 09/07/2014
Species: Bovine	No. of Nt determined: 639
Material used: BTy1 25/06/2014	No. of ambiguities: 0
Region sequenced: VP1	Gene length: 639
RT-PCR primers: A-1C562F/EUR-2B52R	Total no. of comparisons: 1953
A-1C612F/EUR-2B52R	Min. no. of nt for comparison: 600
	Total turn-around time: 90 days
	Sequencing time: 6 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/NIG/3/2013	NIG13-03	639	629	0	98.44	1.56	AFRICA	G-IV
2	A/NIG/7/2013	NIG13-07	639	627	0	98.12	1.88	AFRICA	G-IV
3	A/NIG/8/2013	NIG13-08	639	627	0	98.12	1.88	AFRICA	G-IV
4	A/NIG/6/2013	NIG13-06	639	626	0	97.97	2.03	AFRICA	G-IV
5	A/NIG/36/2009	NIG09-36	639	622	0	97.34	2.66	AFRICA	G-IV
6	A/NIG/39/2009	NIG09-39	639	622	0	97.34	2.66	AFRICA	G-IV
7	A/NIG/38/2009	NIG09-38	639	621	0	97.18	2.82	AFRICA	G-IV
8	A/NIG/10/2012	NIG12-10	639	609	0	95.31	4.69	AFRICA	G-IV
9	A/NIG/2/2011	NIG11-02	639	608	0	95.15	4.85	AFRICA	G-IV
10	A/NIG/8/2012	NIG12-08	639	608	0	95.15	4.85	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	558	0	87.32	12.68	AFRICA	G-IV
2	A21/Lumbwa/KEN/64 (AY593761)	KEN64-AA	639	538	0	84.19	15.81	AFRICA	G-III
3	A/KEN/42/66 (K18/66)(KF561699)	KEN66-42	639	537	0	84.04	15.96	AFRICA	G-I
4	A/NGR/2/73 (KF561704)	NGR73-02	639	536	0	83.88	16.12	AFRICA	G-V
5	A/GHA/16/73 (KF561698)	GHA73-16	636	533	0	83.81	16.19	AFRICA	G-VI
6	A/UGA/13/66 (KF561705)	UGA66-13	639	532	0	83.26	16.74	AFRICA	G-VII
7	A/EGY/1/72 (EF208756)	EGY72-01	639	529	0	82.79	17.21	AFRICA	G-II
8	A12/UK/119/32 (M10975)	UKG32119	639	524	0	82.00	18.00	EURO-SA	A <sub>12</sub>
9	A5/Allier/FRA/60 (AY593780)	FRA60--F	636	513	0	80.66	19.34	EURO-SA	A <sub>5</sub>
10	A/Alem/ARG/81 (AJ306219)	ARG81--A	639	513	0	80.28	19.72	EURO-SA	A-81

nt, nucleotides

\*, not a WRLFMD reference number

Assembled with Report Generator v4.3

© The Pirbright Institute (not to be reproduced without permission)

# FAO World Reference Laboratory for FMD Genotyping Report

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

Page 1 of 1

Serotype: A	Report date: 10/07/2014
WRLFMD Ref No: NIG/3/2013	Reported by: N.J. Knowles
Batch No: WRLFMD/2014/00016	Checked by: K. Bachanek-Bankowska
Sender Ref: PL/BLD/02/13	
Location: Barakin Ladi, Plateau State, Nigeria	Topotype: AFRICA
Date collected: 17/09/2013	Genotype/strain: G-IV
Date received by WRLFMD: 11/04/2014	Sequence filename: NIG13-03.SEQ
Date received for sequencing: 30/06/2014	Date sequence last updated: 02/07/2014
Species: Bovine	No. of Nt determined: 639
Material used: BTy1 14/06/2014	No. of ambiguities: 0
Region sequenced: VP1	Gene length: 639
RT-PCR primers: A-1C562F/EUR-2B52R	Total no. of comparisons: 1953
A-1C612F/EUR-2B52R	Min. no. of nt for comparison: 600
	Total turn-around time: 90 days
	Sequencing time: 10 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/NIG/12/2012	NIG12-12	639	629	0	98.44	1.56	AFRICA	G-IV
2	A/NIG/7/2013	NIG13-07	639	623	0	97.50	2.50	AFRICA	G-IV
3	A/NIG/8/2013	NIG13-08	639	623	0	97.50	2.50	AFRICA	G-IV
4	A/NIG/6/2013	NIG13-06	639	622	0	97.34	2.66	AFRICA	G-IV
5	A/NIG/36/2009	NIG09-36	639	616	0	96.40	3.60	AFRICA	G-IV
6	A/NIG/39/2009	NIG09-39	639	616	0	96.40	3.60	AFRICA	G-IV
7	A/NIG/38/2009	NIG09-38	639	615	0	96.24	3.76	AFRICA	G-IV
8	A/NIG/10/2012	NIG12-10	639	605	0	94.68	5.32	AFRICA	G-IV
9	A/NIG/2/2011	NIG11-02	639	604	0	94.52	5.48	AFRICA	G-IV
10	A/NIG/8/2012	NIG12-08	639	604	0	94.52	5.48	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	556	0	87.01	12.99	AFRICA	G-IV
2	A/KEN/42/66 (K18/66)(KF561699)	KEN66-42	639	535	0	83.72	16.28	AFRICA	G-I
3	A/GHA/16/73 (KF561698)	GHA73-16	636	530	0	83.33	16.67	AFRICA	G-VI
4	A21/Lumbwa/KEN/64 (AY593761)	KEN64-AA	639	532	0	83.26	16.74	AFRICA	G-III
5	A/NGR/2/73 (KF561704)	NGR73-02	639	530	0	82.94	17.06	AFRICA	G-V
6	A/EGY/1/72 (EF208756)	EGY72-01	639	528	0	82.63	17.37	AFRICA	G-II
7	A/UGA/13/66 (KF561705)	UGA66-13	639	528	0	82.63	17.37	AFRICA	G-VII
8	A12/UK/119/32 (M10975)	UKG32119	639	519	0	81.22	18.78	EURO-SA	A <sub>12</sub>
9	A5/Allier/FRA/60 (AY593780)	FRA60--F	636	512	0	80.50	19.50	EURO-SA	A <sub>5</sub>
10	A/Alem/ARG/81 (AJ306219)	ARG81--A	639	508	0	79.50	20.50	EURO-SA	A-81

nt, nucleotides

\*, not a WRLFMD reference number

Assembled with Report Generator v4.3

© The Pirbright Institute (not to be reproduced without permission)

# FAO World Reference Laboratory for FMD Genotyping Report

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

Page 1 of 1

Serotype: A	Report date: 10/07/2014
WRLFMD Ref No: NIG/6/2013	Reported by: N.J. Knowles
Batch No: WRLFMD/2014/00016	Checked by: K. Bachanek-Bankowska
Sender Ref: BAU/T/B2/13	
Location: Toro, Bauchi State, Nigeria	Topotype: AFRICA
Date collected: 21/11/2013	Genotype/strain: G-IV
Date received by WRLFMD: 11/04/2014	Sequence filename: NIG13-06.SEQ
Date received for sequencing: 08/07/2014	Date sequence last updated: 09/07/2014
Species: Bovine	No. of Nt determined: 639
Material used: BTy2 26/06/2014	No. of ambiguities: 0
Region sequenced: VP1	Gene length: 639
RT-PCR primers: A-1C562F/EUR-2B52R	Total no. of comparisons: 1953
A-1C612F/EUR-2B52R	Min. no. of nt for comparison: 600
	Total turn-around time: 90 days
	Sequencing time: 2 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/NIG/8/2013	NIG13-08	639	638	0	99.84	0.16	AFRICA	G-IV
2	A/NIG/7/2013	NIG13-07	639	634	0	99.22	0.78	AFRICA	G-IV
3	A/NIG/12/2012	NIG12-12	639	626	0	97.97	2.03	AFRICA	G-IV
4	A/NIG/3/2013	NIG13-03	639	622	0	97.34	2.66	AFRICA	G-IV
5	A/NIG/36/2009	NIG09-36	639	617	0	96.56	3.44	AFRICA	G-IV
6	A/NIG/39/2009	NIG09-39	639	617	0	96.56	3.44	AFRICA	G-IV
7	A/NIG/38/2009	NIG09-38	639	616	0	96.40	3.60	AFRICA	G-IV
8	A/NIG/2/2011	NIG11-02	639	608	0	95.15	4.85	AFRICA	G-IV
9	A/NIG/10/2012	NIG12-10	639	606	0	94.84	5.16	AFRICA	G-IV
10	A/NIG/8/2012	NIG12-08	639	605	0	94.68	5.32	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	560	0	87.64	12.36	AFRICA	G-IV
2	A/KEN/42/66 (K18/66)(KF561699)	KEN66-42	639	539	0	84.35	15.65	AFRICA	G-I
3	A/UGA/13/66 (KF561705)	UGA66-13	639	537	0	84.04	15.96	AFRICA	G-VII
4	A/GHA/16/73 (KF561698)	GHA73-16	636	532	0	83.65	16.35	AFRICA	G-VI
5	A/EGY/1/72 (EF208756)	EGY72-01	639	534	0	83.57	16.43	AFRICA	G-II
6	A/NGR/2/73 (KF561704)	NGR73-02	639	534	0	83.57	16.43	AFRICA	G-V
7	A21/Lumbwa/KEN/64 (AY593761)	KEN64-AA	639	534	0	83.57	16.43	AFRICA	G-III
8	A12/UK/119/32 (M10975)	UKG32119	639	524	0	82.00	18.00	EURO-SA	A <sub>12</sub>
9	A5/Allier/FRA/60 (AY593780)	FRA60--F	636	515	0	80.97	19.03	EURO-SA	A <sub>5</sub>
10	A/Alem/ARG/81 (AJ306219)	ARG81--A	639	514	0	80.44	19.56	EURO-SA	A-81

nt, nucleotides

\*, not a WRLFMD reference number

Assembled with Report Generator v4.3

© The Pirbright Institute (not to be reproduced without permission)



# FAO World Reference Laboratory for FMD Genotyping Report

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

Page 1 of 1

Serotype: A	Report date: 10/07/2014
WRLFMD Ref No: NIG/7/2013	Reported by: N.J. Knowles
Batch No: WRLFMD/2014/00016	Checked by: K. Bachanek-Bankowska
Sender Ref: BAU/T/C3/13	
Location: Toro, Bauchi State, Nigeria	Topotype: AFRICA
Date collected: 21/11/2013	Genotype/strain: G-IV
Date received by WRLFMD: 11/04/2014	Sequence filename: NIG13-07.SEQ
Date received for sequencing: 30/06/2014	Date sequence last updated: 02/07/2014
Species: Bovine	No. of Nt determined: 639
Material used: BTy1 25/06/2014	No. of ambiguities: 0
Region sequenced: VP1	Gene length: 639
RT-PCR primers: A-1C562F/EUR-2B52R	Total no. of comparisons: 1953
A-1C612F/EUR-2B52R	Min. no. of nt for comparison: 600
	Total turn-around time: 90 days
	Sequencing time: 10 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/NIG/8/2013	NIG13-08	639	635	0	99.37	0.63	AFRICA	G-IV
2	A/NIG/6/2013	NIG13-06	639	634	0	99.22	0.78	AFRICA	G-IV
3	A/NIG/12/2012	NIG12-12	639	627	0	98.12	1.88	AFRICA	G-IV
4	A/NIG/3/2013	NIG13-03	639	623	0	97.50	2.50	AFRICA	G-IV
5	A/NIG/36/2009	NIG09-36	639	616	0	96.40	3.60	AFRICA	G-IV
6	A/NIG/39/2009	NIG09-39	639	616	0	96.40	3.60	AFRICA	G-IV
7	A/NIG/38/2009	NIG09-38	639	615	0	96.24	3.76	AFRICA	G-IV
8	A/NIG/2/2011	NIG11-02	639	606	0	94.84	5.16	AFRICA	G-IV
9	A/NIG/10/2012	NIG12-10	639	605	0	94.68	5.32	AFRICA	G-IV
10	A/NIG/8/2012	NIG12-08	639	604	0	94.52	5.48	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	559	0	87.48	12.52	AFRICA	G-IV
2	A/KEN/42/66 (K18/66)(KF561699)	KEN66-42	639	538	0	84.19	15.81	AFRICA	G-I
3	A/UGA/13/66 (KF561705)	UGA66-13	639	536	0	83.88	16.12	AFRICA	G-VII
4	A21/Lumbwa/KEN/64 (AY593761)	KEN64-AA	639	534	0	83.57	16.43	AFRICA	G-III
5	A/GHA/16/73 (KF561698)	GHA73-16	636	531	0	83.49	16.51	AFRICA	G-VI
6	A/NGR/2/73 (KF561704)	NGR73-02	639	533	0	83.41	16.59	AFRICA	G-V
7	A/EGY/1/72 (EF208756)	EGY72-01	639	531	0	83.10	16.90	AFRICA	G-II
8	A12/UK/119/32 (M10975)	UKG32119	639	522	0	81.69	18.31	EURO-SA	A <sub>12</sub>
9	A5/Allier/FRA/60 (AY593780)	FRA60--F	636	513	0	80.66	19.34	EURO-SA	A <sub>5</sub>
10	A/Alem/ARG/81 (AJ306219)	ARG81--A	639	512	0	80.13	19.87	EURO-SA	A-81

nt, nucleotides

\*, not a WRLFMD reference number

Assembled with Report Generator v4.3

© The Pirbright Institute (not to be reproduced without permission)

# FAO World Reference Laboratory for FMD Genotyping Report

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

Page 1 of 1

Serotype: A	Report date: 10/07/2014
WRLFMD Ref No: NIG/8/2013	Reported by: N.J. Knowles
Batch No: WRLFMD/2014/00016	Checked by: K. Bachanek-Bankowska
Sender Ref: BAU/T/A1/13	
Location: Toro, Bauchi State, Nigeria	Topotype: AFRICA
Date collected: 21/11/2013	Genotype/strain: G-IV
Date received by WRLFMD: 11/04/2014	Sequence filename: NIG13-08.SEQ
Date received for sequencing: 08/07/2014	Date sequence last updated: 09/07/2014
Species: Bovine	No. of Nt determined: 639
Material used: BTy1 25/06/2014	No. of ambiguities: 0
Region sequenced: VP1	Gene length: 639
RT-PCR primers: A-1C562F/EUR-2B52R	Total no. of comparisons: 1953
A-1C612F/EUR-2B52R	Min. no. of nt for comparison: 600
	Total turn-around time: 90 days
	Sequencing time: 2 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/NIG/6/2013	NIG13-06	639	638	0	99.84	0.16	AFRICA	G-IV
2	A/NIG/7/2013	NIG13-07	639	635	0	99.37	0.63	AFRICA	G-IV
3	A/NIG/12/2012	NIG12-12	639	627	0	98.12	1.88	AFRICA	G-IV
4	A/NIG/3/2013	NIG13-03	639	623	0	97.50	2.50	AFRICA	G-IV
5	A/NIG/36/2009	NIG09-36	639	618	0	96.71	3.29	AFRICA	G-IV
6	A/NIG/39/2009	NIG09-39	639	618	0	96.71	3.29	AFRICA	G-IV
7	A/NIG/38/2009	NIG09-38	639	617	0	96.56	3.44	AFRICA	G-IV
8	A/NIG/2/2011	NIG11-02	639	608	0	95.15	4.85	AFRICA	G-IV
9	A/NIG/10/2012	NIG12-10	639	607	0	94.99	5.01	AFRICA	G-IV
10	A/NIG/8/2012	NIG12-08	639	606	0	94.84	5.16	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	561	0	87.79	12.21	AFRICA	G-IV
2	A/KEN/42/66 (K18/66)(KF561699)	KEN66-42	639	540	0	84.51	15.49	AFRICA	G-I
3	A/UGA/13/66 (KF561705)	UGA66-13	639	538	0	84.19	15.81	AFRICA	G-VII
4	A/GHA/16/73 (KF561698)	GHA73-16	636	533	0	83.81	16.19	AFRICA	G-VI
5	A/NGR/2/73 (KF561704)	NGR73-02	639	535	0	83.72	16.28	AFRICA	G-V
6	A21/Lumbwa/KEN/64 (AY593761)	KEN64-AA	639	535	0	83.72	16.28	AFRICA	G-III
7	A/EGY/1/72 (EF208756)	EGY72-01	639	533	0	83.41	16.59	AFRICA	G-II
8	A12/UK/119/32 (M10975)	UKG32119	639	524	0	82.00	18.00	EURO-SA	A <sub>12</sub>
9	A5/Allier/FRA/60 (AY593780)	FRA60--F	636	515	0	80.97	19.03	EURO-SA	A <sub>5</sub>
10	A/Alem/ARG/81 (AJ306219)	ARG81--A	639	514	0	80.44	19.56	EURO-SA	A-81

nt, nucleotides

\*, not a WRLFMD reference number

Assembled with Report Generator v4.3

© The Pirbright Institute (not to be reproduced without permission)

# Report on FMDV A in Nigeria in 2011-2013

Batch: WRLFMD/2014/00016

◆ indicates viruses in this batch

Software: MEGA 6.06

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

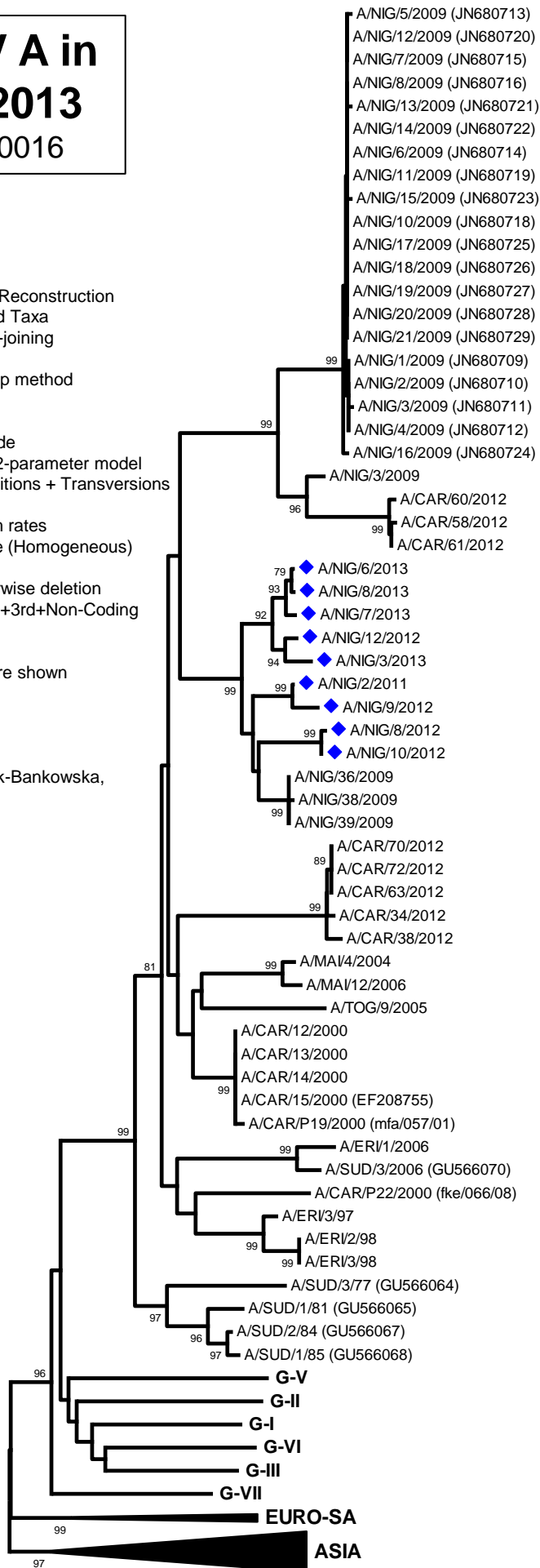
Only bootstrap values of 70% and above are shown

\*, not a WRLFMD Ref. No.

N.J. Knowles, J. Wadsworth & K. Bachanek-Bankowska,  
10 July 2014

© The Pirbright Institute

(not to be reproduced without permission)



G-IV

AFRICA

0.02