

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

Genotyping Report

Date: 5 July 2010

FMDV type A

Country: Nigeria

Period: 2009

No. of isolates: 4

BATCH: WRLFMD/2010/00022



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FAO World Reference Laboratory for FMD Genotyping Report

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Serotype: A WRLFMD Ref No: NIG/3/2009 Batch No: WRLFMD/2010/00022 Sender Ref: 09/02 DL/SHD/FMD/OS3 Location: Shendan, Shendan, Plateau, North Central, Nigeria Date collected: 14/01/2009 Date received by WRLFMD: 16/03/2010 Date received for sequencing: 09/06/2010 Species: Cattle Material used: BTy1 Region sequenced: VP1 RT-PCR primers: O-1C244F/EUR-2B52R O-1C272F/EUR-2B52R	Report date: 24/06/2010 Reported by: N.J. Knowles Checked by: D.P. King Topotype: AFRICA Genotype/strain: G-IV Sequence filename: NIG09-03.SEQ Date sequence last updated: 24/06/2010 No. of Nt determined: 636 No. of ambiguities: 0 Gene length: 636 Total no. of comparisons: 1305 Min. no. of nt for comparison: 300 Total turn-around time: 100 days Sequencing time: 15 days
Comments: This sample was originally incorrectly designated as FMDV type O.	

Most Closely Related Viruses									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	A/CAR/12/2000	CAR00-12	636	578	0	90.88	9.12	AFRICA	G-IV
2	A/CAR/13/2000	CAR00-13	636	578	0	90.88	9.12	AFRICA	G-IV
3	A/CAR/14/2000	CAR00-14	636	578	0	90.88	9.12	AFRICA	G-IV
4	A/CAR/15/2000 (EF208755)	CAR00-15	636	578	0	90.88	9.12	AFRICA	G-IV
5	A/CAR/P19/2000 (mfa/057/01)	CRC00-01	636	576	0	90.57	9.43	AFRICA	G-IV
6	A/NIG/36/2009	NIG09-36	636	570	0	89.62	10.38	AFRICA	G-IV
7	A/NIG/39/2009	NIG09-39	636	570	0	89.62	10.38	AFRICA	G-IV
8	A/MAI/12/2006	MAI06-12	636	569	0	89.47	10.53	AFRICA	G-IV
9	A/MAI/4/2004	MAI04-04	636	569	0	89.47	10.53	AFRICA	G-IV
10	A/NIG/38/2009	NIG09-38	636	569	0	89.47	10.53	AFRICA	G-IV
Most Closely Related Reference Viruses									
(see http://www.wrlfmd.org/fmd_genotyping/prototypes.htm)									
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	636	553	0	86.95	13.05	AFRICA	G-IV
2	A/UGA/13/66	UGA66-13	636	529	0	83.18	16.82	AFRICA	G-VII
3	A/NGR/2/73	NGR73-02	636	528	0	83.02	16.98	AFRICA	G-V
4	A/EGY/1/72 (EF208756)	EGY72-01	636	527	0	82.86	17.14	AFRICA	G-II
5	A21/Lumbwa/KEN/64 (AY593761)	KEN64-AA	636	527	0	82.86	17.14	AFRICA	G-III
6	A/KEN/42/66 (K18/66)	KEN66-42	636	524	0	82.39	17.61	AFRICA	G-I
7	A/GHA/16/73	GHA73-16	633	521	0	82.31	17.69	AFRICA	G-VI
8	A12/UK/119/32 (M10975)	UKG32119	636	517	0	81.29	18.71	EURO-SA	A ₁₂
9	A24/Cruzeiro/BRA/55 (AY593768)	BRA55--H	636	504	0	79.25	20.75	EURO-SA	A ₂₄
10	A23/Kitale/KEN/64 (AY593766)	KEN64-AB	636	503	0	79.09	20.91	AFRICA	G-VIII

nt, nucleotides

*, not a WRLFMD reference number

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Serotype: A WRLFMD Ref No: NIG/36/2009 Batch No: WRLFMD/2010/00022 Sender Ref: 09/08 AD/FMD/EPTH4 Location: Yola, Adamawa State, North East, Nigeria Date collected: 01/01/2009 Date received by WRLFMD: 16/03/2010 Date received for sequencing: 09/06/2010 Species: Cattle Material used: BTy1 Region sequenced: VP1 RT-PCR primers: A-1C562F/EUR-2B52R A-1C612F/EUR-2B52R	Report date: 17/06/2010 Reported by: N.J. Knowles Checked by: D.P. King Topotype: AFRICA Genotype/strain: G-IV Sequence filename: NIG09-36.SEQ Date sequence last updated: 17/06/2010 No. of Nt determined: 639 No. of ambiguities: 0 Gene length: 639 Total no. of comparisons: 1300 Min. no. of nt for comparison: 300 Total turn-around time: 93 days Sequencing time: 8 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/39/2009	NIG09-39	639	639	0	100.00	0.00	AFRICA	G-IV
2	A/NIG/38/2009	NIG09-38	639	638	0	99.84	0.16	AFRICA	G-IV
3	A/CAR/12/2000	CAR00-12	639	599	0	93.74	6.26	AFRICA	G-IV
4	A/CAR/13/2000	CAR00-13	639	599	0	93.74	6.26	AFRICA	G-IV
5	A/CAR/14/2000	CAR00-14	639	599	0	93.74	6.26	AFRICA	G-IV
6	A/CAR/15/2000 (EF208755)	CAR00-15	639	599	0	93.74	6.26	AFRICA	G-IV
7	A/CAR/P19/2000 (mfa/057/01)	CRC00-01	639	597	0	93.43	6.57	AFRICA	G-IV
8	A/MAI/4/2004	MAI04-04	639	582	0	91.08	8.92	AFRICA	G-IV
9	A/MAI/12/2006	MAI06-12	639	580	0	90.77	9.23	AFRICA	G-IV
10	A/CAR/P22/2000 (fke/066/08)	CRC00-02	639	579	0	90.61	9.39	AFRICA	G-IV
Most Closely Related Reference Viruses									
(see http://www.wrlfmd.org/fmd_genotyping/prototypes.htm)									
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	565	0	88.42	11.58	AFRICA	G-IV
2	A/KEN/42/66 (K18/66)	KEN66-42	639	544	0	85.13	14.87	AFRICA	G-I
3	A/UGA/13/66	UGA66-13	639	539	0	84.35	15.65	AFRICA	G-VII
4	A21/Lumbwa/KEN/64 (AY593761)	KEN64-AA	639	535	0	83.72	16.28	AFRICA	G-III
5	A/NGR/2/73	NGR73-02	639	533	0	83.41	16.59	AFRICA	G-V
6	A/GHA/16/73	GHA73-16	636	529	0	83.18	16.82	AFRICA	G-VI
7	A/EGY/1/72 (EF208756)	EGY72-01	639	530	0	82.94	17.06	AFRICA	G-II
8	A12/UK/119/32 (M10975)	UKG32119	639	526	0	82.32	17.68	EURO-SA	A ₁₂
9	A5/Allier/FRA/60 (AY593780)	FRA60--F	636	515	0	80.97	19.03	EURO-SA	A ₅
10	A/Alem/ARG/81 (AJ306219)	ARG81--A	639	515	0	80.59	19.41	EURO-SA	A-81

nt, nucleotides

*, not a WRLFMD reference number

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Serotype: A WRLFMD Ref No: NIG/38/2009 Batch No: WRLFMD/2010/00022 Sender Ref: 09/08 AD/FMD/EPTH6 Location: Yola, Adamawa State, North East, Nigeria Date collected: 01/01/2009 Date received by WRLFMD: 16/03/2010 Date received for sequencing: 09/06/2010 Species: Cattle Material used: BTy1 Region sequenced: VP1 RT-PCR primers: A-1C562F/EUR-2B52R A-1C612F/EUR-2B52R	Report date: 17/06/2010 Reported by: N.J. Knowles Checked by: D.P. King Topotype: AFRICA Genotype/strain: G-IV Sequence filename: NIG09-38.SEQ Date sequence last updated: 17/06/2010 No. of Nt determined: 639 No. of ambiguities: 0 Gene length: 639 Total no. of comparisons: 1300 Min. no. of nt for comparison: 300 Total turn-around time: 93 days Sequencing time: 8 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/36/2009	NIG09-36	639	638	0	99.84	0.16	AFRICA	G-IV
2	A/NIG/39/2009	NIG09-39	639	638	0	99.84	0.16	AFRICA	G-IV
3	A/CAR/12/2000	CAR00-12	639	598	0	93.58	6.42	AFRICA	G-IV
4	A/CAR/13/2000	CAR00-13	639	598	0	93.58	6.42	AFRICA	G-IV
5	A/CAR/14/2000	CAR00-14	639	598	0	93.58	6.42	AFRICA	G-IV
6	A/CAR/15/2000 (EF208755)	CAR00-15	639	598	0	93.58	6.42	AFRICA	G-IV
7	A/CAR/P19/2000 (mfa/057/01)	CRC00-01	639	596	0	93.27	6.73	AFRICA	G-IV
8	A/MAI/4/2004	MAI04-04	639	581	0	90.92	9.08	AFRICA	G-IV
9	A/ERI/3/97	ERI97-03	639	579	0	90.61	9.39	AFRICA	G-IV
10	A/MAI/12/2006	MAI06-12	639	579	0	90.61	9.39	AFRICA	G-IV
Most Closely Related Reference Viruses									
(see http://www.wrlfmd.org/fmd_genotyping/prototypes.htm)									
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	564	0	88.26	11.74	AFRICA	G-IV
2	A/KEN/42/66 (K18/66)	KEN66-42	639	543	0	84.98	15.02	AFRICA	G-I
3	A/UGA/13/66	UGA66-13	639	538	0	84.19	15.81	AFRICA	G-VII
4	A21/Lumbwa/KEN/64 (AY593761)	KEN64-AA	639	534	0	83.57	16.43	AFRICA	G-III
5	A/NGR/2/73	NGR73-02	639	533	0	83.41	16.59	AFRICA	G-V
6	A/GHA/16/73	GHA73-16	636	528	0	83.02	16.98	AFRICA	G-VI
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	525	0	82.16	17.84	EURO-SA	A ₁₂
9	A5/Allier/FRA/60 (AY593780)	FRA60--F	636	514	0	80.82	19.18	EURO-SA	A ₅
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

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Serotype: A WRLFMD Ref No: NIG/39/2009 Batch No: WRLFMD/2010/00022 Sender Ref: 09/08 AD/FMD/EPTH7 Location: Yola, Adamawa State, North East, Nigeria Date collected: 01/01/2009 Date received by WRLFMD: 16/03/2010 Date received for sequencing: 09/06/2010 Species: Cattle Material used: BTy1 Region sequenced: VP1 RT-PCR primers: A-1C562F/EUR-2B52R A-1C612F/EUR-2B52R	Report date: 17/06/2010 Reported by: N.J. Knowles Checked by: D.P. King Topotype: AFRICA Genotype/strain: G-IV Sequence filename: NIG09-39.SEQ Date sequence last updated: 17/06/2010 No. of Nt determined: 639 No. of ambiguities: 0 Gene length: 639 Total no. of comparisons: 1300 Min. no. of nt for comparison: 300 Total turn-around time: 93 days Sequencing time: 8 days
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2	A/NIG/38/2009	NIG09-38	639	638	0	99.84	0.16	AFRICA	G-IV
3	A/CAR/12/2000	CAR00-12	639	599	0	93.74	6.26	AFRICA	G-IV
4	A/CAR/13/2000	CAR00-13	639	599	0	93.74	6.26	AFRICA	G-IV
5	A/CAR/14/2000	CAR00-14	639	599	0	93.74	6.26	AFRICA	G-IV
6	A/CAR/15/2000 (EF208755)	CAR00-15	639	599	0	93.74	6.26	AFRICA	G-IV
7	A/CAR/P19/2000 (mfa/057/01)	CRC00-01	639	597	0	93.43	6.57	AFRICA	G-IV
8	A/MAI/4/2004	MAI04-04	639	582	0	91.08	8.92	AFRICA	G-IV
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2	A/KEN/42/66 (K18/66)	KEN66-42	639	544	0	85.13	14.87	AFRICA	G-I
3	A/UGA/13/66	UGA66-13	639	539	0	84.35	15.65	AFRICA	G-VII
4	A21/Lumbwa/KEN/64 (AY593761)	KEN64-AA	639	535	0	83.72	16.28	AFRICA	G-III
5	A/NGR/2/73	NGR73-02	639	533	0	83.41	16.59	AFRICA	G-V
6	A/GHA/16/73	GHA73-16	636	529	0	83.18	16.82	AFRICA	G-VI
7	A/EGY/1/72 (EF208756)	EGY72-01	639	530	0	82.94	17.06	AFRICA	G-II
8	A12/UK/119/32 (M10975)	UKG32119	639	526	0	82.32	17.68	EURO-SA	A ₁₂
9	A5/Allier/FRA/60 (AY593780)	FRA60--F	636	515	0	80.97	19.03	EURO-SA	A ₅
10	A/Alem/ARG/81 (AJ306219)	ARG81--A	639	515	0	80.59	19.41	EURO-SA	A-81

nt, nucleotides

*, not a WRLFMD reference number

Assembled with Report Generator v3.1

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Report on FMDV A in Nigeria in 2009

Batch: WRLFMD/2010/00022

Software: MEGA 4.0

No. of Taxa : 143

Data File : n:\levd\meg\db\fmvdv\A\NIG2009a.meg

Data Title : A Nigeria 2009

Data Type : Nucleotide (Coding)

Analysis : Phylogeny reconstruction

Tree Inference : =====

->Method : Neighbor-Joining

->Phylogeny Test and options : Bootstrap (1000 replicates; seed=64238)

Include Sites : =====

->Gaps/Missing Data : Pairwise Deletion

->Codon Positions : 1st+2nd+3rd+Noncoding

Substitution Model : =====

->Model : Nucleotide: Kimura 2-parameter

->Substitutions to Include : d: Transitions + Transversions

->Pattern among Lineages : Same (Homogeneous)

->Rates among sites : Uniform rates

No. of Sites : 642

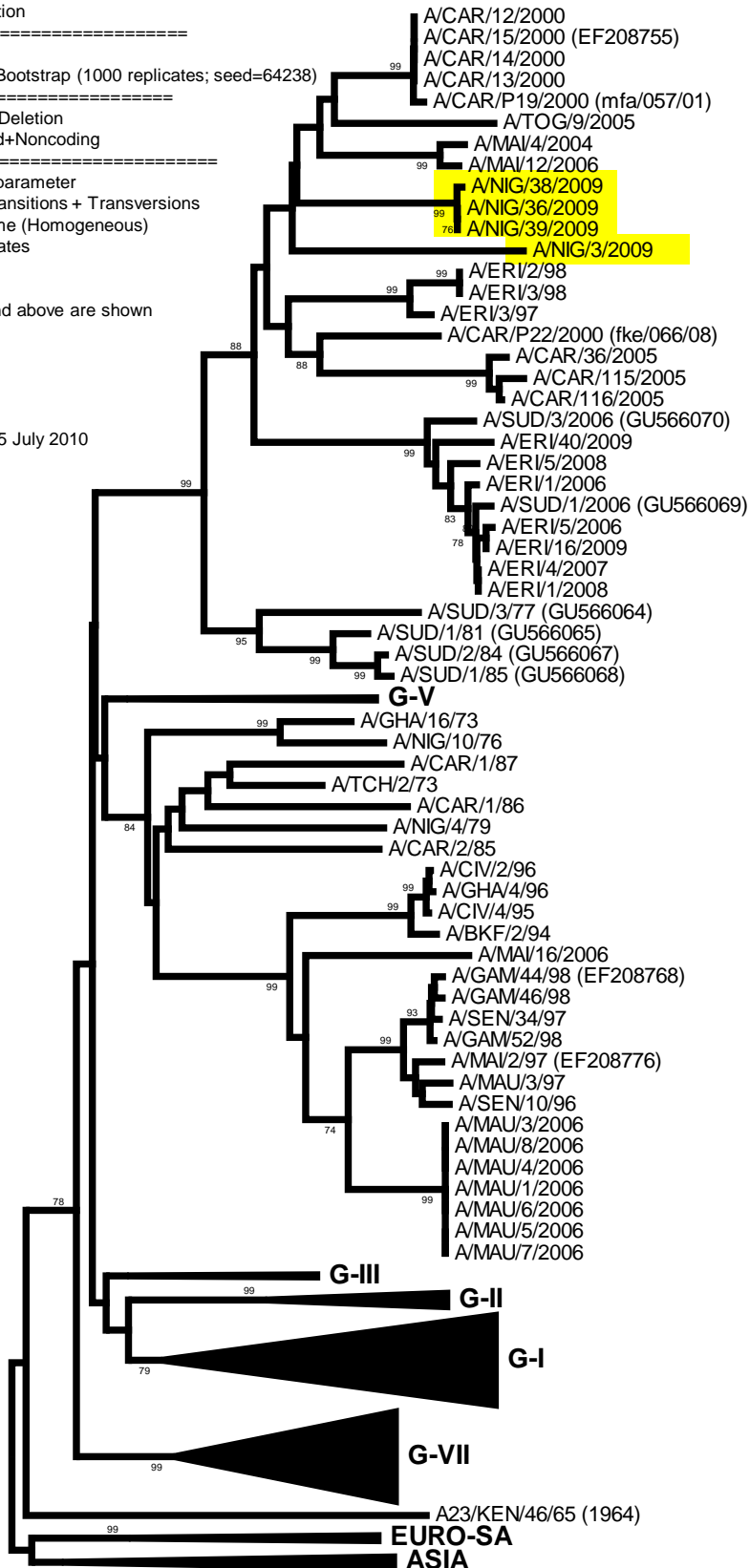
No Of Bootstrap Reps = 1000

Only bootstrap values of 70% and above are shown

*, not a WRLFMD Ref. No.

N.J. Knowles & J. Wadsworth, 05 July 2010

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