

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

Genotyping Report

Report Date for this Batch: 14 February 2014

FMDV type A

Country: Tanzania

Period: 2013

No. of samples: 6

BATCH: WRLFMD/2014/00002



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FAO World Reference Laboratory for FMD Genotyping Report

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

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Serotype: A	Report date: 14/02/2014
WRLFMD Ref No: TAN/5/2013	Reported by: N.J. Knowles
Batch No: WRLFMD/2014/00002	Checked by: B. Valdazo-Gonzalez
Sender Ref: 8547	
Location: not given, Tanzania	Topotype: AFRICA
Date collected: 16/03/2013	Genotype/strain: G-I
Date received by WRLFMD: 27/01/2014	Sequence filename: TAN13-05.SEQ
Date received for sequencing: 10/02/2014	Date sequence last updated: 12/02/2014
Species: Cattle	No. of Nt determined: 639
Material used: BTy1 29/01/2014	No. of ambiguities: 0
Region sequenced: VP1	Gene length: 639
RT-PCR primers: A-1C562F/EUR-2B52R	Total no. of comparisons: 1847
A-1C612F/EUR-2B52R	Min. no. of nt for comparison: 600
	Total turn-around time: 18 days
	Sequencing time: 4 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/TAN/6/2013	TAN13-06	639	639	0	100.00	0.00	AFRICA	G-I
2	A/TAN/7/2013	TAN13-07	639	639	0	100.00	0.00	AFRICA	G-I
3	A/TAN/2/2013	TAN13-02	639	637	0	99.69	0.31	AFRICA	G-I
4	A/TAN/1/2013	TAN13-01	639	636	0	99.53	0.47	AFRICA	G-I
5	A/TAN/3/2013	TAN13-03	639	636	0	99.53	0.47	AFRICA	G-I
6	A/TAN/56/2012	TAN12-56	639	636	0	99.53	0.47	AFRICA	G-I
7	A/TAN/61/2012	TAN12-61	639	636	0	99.53	0.47	AFRICA	G-I
8	A/TAN/65/2012	TAN12-65	639	636	0	99.53	0.47	AFRICA	G-I
9	A/TAN/66/2012	TAN12-66	639	636	0	99.53	0.47	AFRICA	G-I
10	A/TAN/15/2013	TAN13-15	639	635	0	99.37	0.63	AFRICA	G-I
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/KEN/42/66 (K18/66)(KF561699)	KEN66-42	639	539	0	84.35	15.65	AFRICA	G-I
2	A/UGA/13/66 (KF561705)	UGA66-13	639	528	0	82.63	17.37	AFRICA	G-VII
3	A21/Lumbwa/KEN/64 (AY593761)	KEN64-AA	639	526	0	82.32	17.68	AFRICA	G-III
4	A/GHA/16/73 (KF561698)	GHA73-16	636	522	0	82.08	17.92	AFRICA	G-VI
5	A/NGR/2/73 (KF561704)	NGR73-02	639	521	0	81.53	18.47	AFRICA	G-V
6	A12/UK/119/32 (M10975)	UKG32119	639	516	0	80.75	19.25	EURO-SA	A ₁₂
7	A/EGY/1/72 (EF208756)	EGY72-01	639	512	0	80.13	19.87	AFRICA	G-II
8	A/SUD/3/77 (GU566064)	SUD77-03	639	512	0	80.13	19.87	AFRICA	G-IV
9	A/IRN/15/2012	IRN12-15	639	508	0	79.50	20.50	ASIA	Iran-05 ^{SIS-12}
10	A15/Bangkok/TAI/60 (AY593755)	TAI60--D	639	506	0	79.19	20.81	ASIA	A15

nt, nucleotides

*, not a WRLFMD reference number

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Serotype: A WRLFMD Ref No: TAN/6/2013 Batch No: WRLFMD/2014/00002 Sender Ref: 8547 Location: not given, Tanzania Date collected: 16/03/2013 Date received by WRLFMD: 27/01/2014 Date received for sequencing: 12/02/2014 Species: Cattle Material used: BTy1 07/02/2014 Region sequenced: VP1 RT-PCR primers: A-1C562F/EUR-2B52R A-1C612F/EUR-2B52R	Report date: 14/02/2014 Reported by: N.J. Knowles Checked by: B. Valdazo-Gonzalez Topotype: AFRICA Genotype/strain: G-I Sequence filename: TAN13-06.SEQ Date sequence last updated: 13/02/2014 No. of Nt determined: 639 No. of ambiguities: 0 Gene length: 639 Total no. of comparisons: 1847 Min. no. of nt for comparison: 600 Total turn-around time: 18 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/TAN/5/2013	TAN13-05	639	639	0	100.00	0.00	AFRICA	G-I
2	A/TAN/7/2013	TAN13-07	639	639	0	100.00	0.00	AFRICA	G-I
3	A/TAN/2/2013	TAN13-02	639	637	0	99.69	0.31	AFRICA	G-I
4	A/TAN/1/2013	TAN13-01	639	636	0	99.53	0.47	AFRICA	G-I
5	A/TAN/3/2013	TAN13-03	639	636	0	99.53	0.47	AFRICA	G-I
6	A/TAN/56/2012	TAN12-56	639	636	0	99.53	0.47	AFRICA	G-I
7	A/TAN/61/2012	TAN12-61	639	636	0	99.53	0.47	AFRICA	G-I
8	A/TAN/65/2012	TAN12-65	639	636	0	99.53	0.47	AFRICA	G-I
9	A/TAN/66/2012	TAN12-66	639	636	0	99.53	0.47	AFRICA	G-I
10	A/TAN/15/2013	TAN13-15	639	635	0	99.37	0.63	AFRICA	G-I
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/KEN/42/66 (K18/66)(KF561699)	KEN66-42	639	539	0	84.35	15.65	AFRICA	G-I
2	A/UGA/13/66 (KF561705)	UGA66-13	639	528	0	82.63	17.37	AFRICA	G-VII
3	A21/Lumbwa/KEN/64 (AY593761)	KEN64-AA	639	526	0	82.32	17.68	AFRICA	G-III
4	A/GHA/16/73 (KF561698)	GHA73-16	636	522	0	82.08	17.92	AFRICA	G-VI
5	A/NGR/2/73 (KF561704)	NGR73-02	639	521	0	81.53	18.47	AFRICA	G-V
6	A12/UK/119/32 (M10975)	UKG32119	639	516	0	80.75	19.25	EURO-SA	A ₁₂
7	A/EGY/1/72 (EF208756)	EGY72-01	639	512	0	80.13	19.87	AFRICA	G-II
8	A/SUD/3/77 (GU566064)	SUD77-03	639	512	0	80.13	19.87	AFRICA	G-IV
9	A/IRN/15/2012	IRN12-15	639	508	0	79.50	20.50	ASIA	Iran-05 ^{SIS-12}
10	A15/Bangkok/TAI/60 (AY593755)	TAI60--D	639	506	0	79.19	20.81	ASIA	A15

nt, nucleotides

*, not a WRLFMD reference number

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Serotype: A	Report date: 14/02/2014
WRLFMD Ref No: TAN/7/2013	Reported by: N.J. Knowles
Batch No: WRLFMD/2014/00002	Checked by: B. Valdazo-Gonzalez
Sender Ref: 8549	
Location: not given, Tanzania	Topotype: AFRICA
Date collected: 16/03/2013	Genotype/strain: G-I
Date received by WRLFMD: 27/01/2014	Sequence filename: TAN13-07.SEQ
Date received for sequencing: 10/02/2014	Date sequence last updated: 12/02/2014
Species: Cattle	No. of Nt determined: 639
Material used: BTy1 29/01/2014	No. of ambiguities: 0
Region sequenced: VP1	Gene length: 639
RT-PCR primers: A-1C562F/EUR-2B52R	Total no. of comparisons: 1847
A-1C612F/EUR-2B52R	Min. no. of nt for comparison: 600
	Total turn-around time: 18 days
	Sequencing time: 4 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/TAN/5/2013	TAN13-05	639	639	0	100.00	0.00	AFRICA	G-I
2	A/TAN/6/2013	TAN13-06	639	639	0	100.00	0.00	AFRICA	G-I
3	A/TAN/2/2013	TAN13-02	639	637	0	99.69	0.31	AFRICA	G-I
4	A/TAN/1/2013	TAN13-01	639	636	0	99.53	0.47	AFRICA	G-I
5	A/TAN/3/2013	TAN13-03	639	636	0	99.53	0.47	AFRICA	G-I
6	A/TAN/56/2012	TAN12-56	639	636	0	99.53	0.47	AFRICA	G-I
7	A/TAN/61/2012	TAN12-61	639	636	0	99.53	0.47	AFRICA	G-I
8	A/TAN/65/2012	TAN12-65	639	636	0	99.53	0.47	AFRICA	G-I
9	A/TAN/66/2012	TAN12-66	639	636	0	99.53	0.47	AFRICA	G-I
10	A/TAN/15/2013	TAN13-15	639	635	0	99.37	0.63	AFRICA	G-I
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/KEN/42/66 (K18/66)(KF561699)	KEN66-42	639	539	0	84.35	15.65	AFRICA	G-I
2	A/UGA/13/66 (KF561705)	UGA66-13	639	528	0	82.63	17.37	AFRICA	G-VII
3	A21/Lumbwa/KEN/64 (AY593761)	KEN64-AA	639	526	0	82.32	17.68	AFRICA	G-III
4	A/GHA/16/73 (KF561698)	GHA73-16	636	522	0	82.08	17.92	AFRICA	G-VI
5	A/NGR/2/73 (KF561704)	NGR73-02	639	521	0	81.53	18.47	AFRICA	G-V
6	A12/UK/119/32 (M10975)	UKG32119	639	516	0	80.75	19.25	EURO-SA	A ₁₂
7	A/EGY/1/72 (EF208756)	EGY72-01	639	512	0	80.13	19.87	AFRICA	G-II
8	A/SUD/3/77 (GU566064)	SUD77-03	639	512	0	80.13	19.87	AFRICA	G-IV
9	A/IRN/15/2012	IRN12-15	639	508	0	79.50	20.50	ASIA	Iran-05 ^{SIS-12}
10	A15/Bangkok/TAI/60 (AY593755)	TAI60--D	639	506	0	79.19	20.81	ASIA	A15

nt, nucleotides

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Serotype: A	Report date: 14/02/2014
WRLFMD Ref No: TAN/14/2013	Reported by: N.J. Knowles
Batch No: WRLFMD/2014/00002	Checked by: B. Valdazo-Gonzalez
Sender Ref: 8571	
Location: Bonchugu, Tanzania	Topotype: AFRICA
Date collected: 20/06/2013	Genotype/strain: G-I
Date received by WRLFMD: 27/01/2014	Sequence filename: TAN13-14.SEQ
Date received for sequencing: 10/02/2014	Date sequence last updated: 12/02/2014
Species: Cattle	No. of Nt determined: 639
Material used: BTy2 01/02/2014	No. of ambiguities: 0
Region sequenced: VP1	Gene length: 639
RT-PCR primers: A-1C562F/EUR-2B52R	Total no. of comparisons: 1847
A-1C612F/EUR-2B52R	Min. no. of nt for comparison: 600
	Total turn-around time: 18 days
	Sequencing time: 4 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/TAN/15/2013	TAN13-15	639	638	0	99.84	0.16	AFRICA	G-I
2	A/TAN/2/2013	TAN13-02	639	636	0	99.53	0.47	AFRICA	G-I
3	A/TAN/1/2013	TAN13-01	639	635	0	99.37	0.63	AFRICA	G-I
4	A/TAN/3/2013	TAN13-03	639	635	0	99.37	0.63	AFRICA	G-I
5	A/TAN/56/2012	TAN12-56	639	635	0	99.37	0.63	AFRICA	G-I
6	A/TAN/61/2012	TAN12-61	639	635	0	99.37	0.63	AFRICA	G-I
7	A/TAN/65/2012	TAN12-65	639	635	0	99.37	0.63	AFRICA	G-I
8	A/TAN/66/2012	TAN12-66	639	635	0	99.37	0.63	AFRICA	G-I
9	A/TAN/5/2013	TAN13-05	639	634	0	99.22	0.78	AFRICA	G-I
10	A/TAN/6/2013	TAN13-06	639	634	0	99.22	0.78	AFRICA	G-I
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/KEN/42/66 (K18/66)(KF561699)	KEN66-42	639	540	0	84.51	15.49	AFRICA	G-I
2	A/UGA/13/66 (KF561705)	UGA66-13	639	529	0	82.79	17.21	AFRICA	G-VII
3	A21/Lumbwa/KEN/64 (AY593761)	KEN64-AA	639	526	0	82.32	17.68	AFRICA	G-III
4	A/GHA/16/73 (KF561698)	GHA73-16	636	523	0	82.23	17.77	AFRICA	G-VI
5	A/NGR/2/73 (KF561704)	NGR73-02	639	524	0	82.00	18.00	AFRICA	G-V
6	A12/UK/119/32 (M10975)	UKG32119	639	516	0	80.75	19.25	EURO-SA	A ₁₂
7	A/EGY/1/72 (EF208756)	EGY72-01	639	514	0	80.44	19.56	AFRICA	G-II
8	A/SUD/3/77 (GU566064)	SUD77-03	639	511	0	79.97	20.03	AFRICA	G-IV
9	A/IRN/15/2012	IRN12-15	639	510	0	79.81	20.19	ASIA	Iran-05 ^{SIS-12}
10	A15/Bangkok/TAI/60 (AY593755)	TAI60--D	639	506	0	79.19	20.81	ASIA	A15

nt, nucleotides

*, not a WRLFMD reference number

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Serotype: A	Report date: 14/02/2014
WRLFMD Ref No: TAN/15/2013	Reported by: N.J. Knowles
Batch No: WRLFMD/2014/00002	Checked by: B. Valdazo-Gonzalez
Sender Ref: 8531	
Location: Bonchugu, Tanzania	Topotype: AFRICA
Date collected: 20/06/2013	Genotype/strain: G-I
Date received by WRLFMD: 27/01/2014	Sequence filename: TAN13-15.SEQ
Date received for sequencing: 10/02/2014	Date sequence last updated: 12/02/2014
Species: Cattle	No. of Nt determined: 639
Material used: BTy1 30/01/2014	No. of ambiguities: 0
Region sequenced: VP1	Gene length: 639
RT-PCR primers: A-1C562F/EUR-2B52R	Total no. of comparisons: 1847
A-1C612F/EUR-2B52R	Min. no. of nt for comparison: 600
	Total turn-around time: 18 days
	Sequencing time: 4 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/TAN/14/2013	TAN13-14	639	638	0	99.84	0.16	AFRICA	G-I
2	A/TAN/2/2013	TAN13-02	639	637	0	99.69	0.31	AFRICA	G-I
3	A/TAN/1/2013	TAN13-01	639	636	0	99.53	0.47	AFRICA	G-I
4	A/TAN/3/2013	TAN13-03	639	636	0	99.53	0.47	AFRICA	G-I
5	A/TAN/56/2012	TAN12-56	639	636	0	99.53	0.47	AFRICA	G-I
6	A/TAN/61/2012	TAN12-61	639	636	0	99.53	0.47	AFRICA	G-I
7	A/TAN/65/2012	TAN12-65	639	636	0	99.53	0.47	AFRICA	G-I
8	A/TAN/66/2012	TAN12-66	639	636	0	99.53	0.47	AFRICA	G-I
9	A/TAN/5/2013	TAN13-05	639	635	0	99.37	0.63	AFRICA	G-I
10	A/TAN/6/2013	TAN13-06	639	635	0	99.37	0.63	AFRICA	G-I
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/KEN/42/66 (K18/66)(KF561699)	KEN66-42	639	541	0	84.66	15.34	AFRICA	G-I
2	A/UGA/13/66 (KF561705)	UGA66-13	639	530	0	82.94	17.06	AFRICA	G-VII
3	A21/Lumbwa/KEN/64 (AY593761)	KEN64-AA	639	527	0	82.47	17.53	AFRICA	G-III
4	A/GHA/16/73 (KF561698)	GHA73-16	636	524	0	82.39	17.61	AFRICA	G-VI
5	A/NGR/2/73 (KF561704)	NGR73-02	639	525	0	82.16	17.84	AFRICA	G-V
6	A12/UK/119/32 (M10975)	UKG32119	639	517	0	80.91	19.09	EURO-SA	A ₁₂
7	A/EGY/1/72 (EF208756)	EGY72-01	639	513	0	80.28	19.72	AFRICA	G-II
8	A/SUD/3/77 (GU566064)	SUD77-03	639	512	0	80.13	19.87	AFRICA	G-IV
9	A/IRN/15/2012	IRN12-15	639	511	0	79.97	20.03	ASIA	Iran-05 ^{SIS-12}
10	A15/Bangkok/TAI/60 (AY593755)	TAI60--D	639	507	0	79.34	20.66	ASIA	A15

nt, nucleotides

*, not a WRLFMD reference number

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Serotype: A	Report date: 14/02/2014
WRLFMD Ref No: TAN/26/2013	Reported by: N.J. Knowles
Batch No: WRLFMD/2014/00002	Checked by: B. Valdazo-Gonzalez
Sender Ref: 9101	
Location: Makundusi, Tanzania	Topotype: AFRICA
Date collected: 16/08/2013	Genotype/strain: G-I
Date received by WRLFMD: 27/01/2014	Sequence filename: TAN13-26.SEQ
Date received for sequencing: 12/02/2014	Date sequence last updated: 13/02/2014
Species: Cattle	No. of Nt determined: 639
Material used: BTy1 04/02/2014	No. of ambiguities: 0
Region sequenced: VP1	Gene length: 639
RT-PCR primers: A-1C562F/EUR-2B52R	Total no. of comparisons: 1847
A-1C612F/EUR-2B52R	Min. no. of nt for comparison: 600
	Total turn-around time: 18 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/KEN/28/2008 (KF561702)	KEN08-28	639	623	0	97.50	2.50	AFRICA	G-I
2	A/TAN/47/2009 (KF561697)	TAN09-47	639	620	0	97.03	2.97	AFRICA	G-I
3	A/TAN/42/2009 (KF561695)	TAN09-42	639	617	0	96.56	3.44	AFRICA	G-I
4	A/TAN/11/2009 (KF561694)	TAN09-11	639	616	0	96.40	3.60	AFRICA	G-I
5	A/TAN/4/2009 (KF561692)	TAN09-04	639	616	0	96.40	3.60	AFRICA	G-I
6	A/TAN-CVL-2009-0052	TAN09-AB	639	616	0	96.40	3.60	AFRICA	G-I
7	A/TAN-CVL-2009-0052b	TAN09-AD	639	616	0	96.40	3.60	AFRICA	G-I
8	A/COD/10/2011	COD11-10	639	615	0	96.24	3.76	AFRICA	G-I
9	A/COD/11/2011	COD11-11	639	615	0	96.24	3.76	AFRICA	G-I
10	A/COD/12/2011	COD11-12	639	615	0	96.24	3.76	AFRICA	G-I
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/KEN/42/66 (K18/66)(KF561699)	KEN66-42	639	546	0	85.45	14.55	AFRICA	G-I
2	A21/Lumbwa/KEN/64 (AY593761)	KEN64-AA	639	527	0	82.47	17.53	AFRICA	G-III
3	A/UGA/13/66 (KF561705)	UGA66-13	639	523	0	81.85	18.15	AFRICA	G-VII
4	A/EGY/1/72 (EF208756)	EGY72-01	639	521	0	81.53	18.47	AFRICA	G-II
5	A/NGR/2/73 (KF561704)	NGR73-02	639	520	0	81.38	18.62	AFRICA	G-V
6	A12/UK/119/32 (M10975)	UKG32119	639	519	0	81.22	18.78	EURO-SA	A ₁₂
7	A/GHA/16/73 (KF561698)	GHA73-16	636	515	0	80.97	19.03	AFRICA	G-VI
8	A/SUD/3/77 (GU566064)	SUD77-03	639	514	0	80.44	19.56	AFRICA	G-IV
9	A/IRN/2/87 (EF208770)	IRN87-02	636	510	0	80.19	19.81	ASIA	Iran-87
10	A5/Allier/FRA/60 (AY593780)	FRA60--F	636	510	0	80.19	19.81	EURO-SA	A ₅

nt, nucleotides

*, not a WRLFMD reference number

Assembled with Report Generator v4.1

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Report on FMDV A in Tanzania in 2013

Batch: WRLFMD/2014/00002

◆ indicates viruses in this batch

Software: MEGA 5.2

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 : 639

No Of Bootstrap Reps = 1000

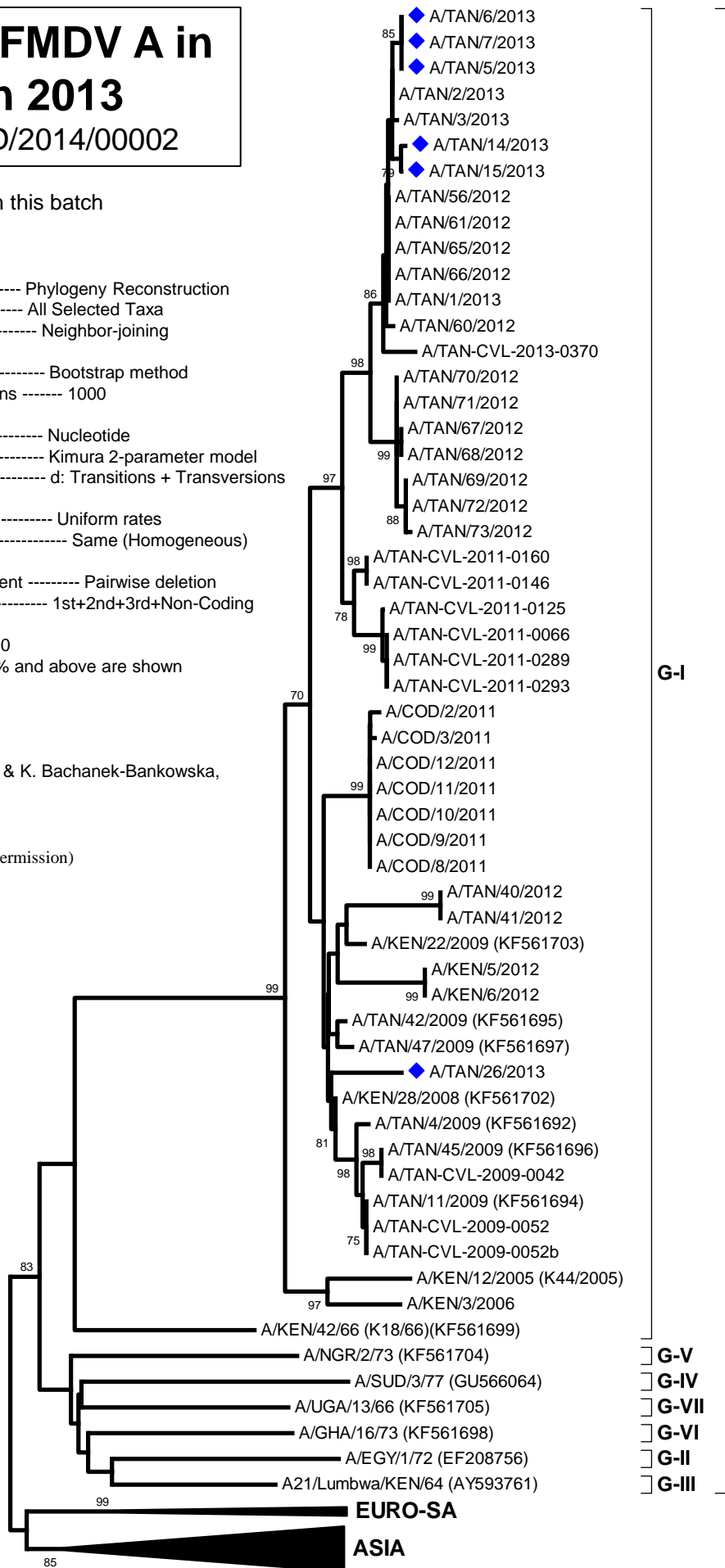
Only bootstrap values of 70% and above are shown

*, not a WRLFMD Ref. No.

N.J. Knowles, J. Wadsworth & K. Bachanek-Bankowska,
14 February 2014

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