

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

Genotyping Report

Report Date for this Batch: 10 June 2014

FMDV type A

Country: People's Republic of China

Period: 2013

No. of sequences: 8 (VP1)

Originator: Sequences deposited on GenBank by the College of
Animal Science, Guizhou University, Xueshi Road, Guiyang,
Guizhou 550025, P.R. China.



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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: 09/06/2014
WRLFMD Ref No: GZ-BY/CHA/2013	Reported by: N.J. Knowles
Batch No: WRLMEG/2014/00012	Checked by: K. Bachanek-Bankowska
Sender Ref: GZ-BY	
Location: GuiZhou Province, China	Topotype: ASIA
Date collected: 04/05/2013	Genotype/strain: Sea-97
Date received by WRLFMD: 07/06/2014	Sequence filename: CHA13-AE.SEQ
Date received for sequencing: n/a	Date sequence last updated: 09/06/2014
Species: Cow	No. of Nt determined: 636
Material used: Not known	No. of ambiguities: 0
Region sequenced: VP1	Gene length: 636
RT-PCR primers: Not known	Total no. of comparisons: 1937
	Min. no. of nt for comparison: 600
	Total turn-around 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/GZ-GY/CHA/2013 (KJ646651)	CHA13-AK	636	636	0	100.00	0.00	ASIA	Sea-97
2	A/GZ-YA/CHA/2013 (KJ646646)	CHA13-AF	636	636	0	100.00	0.00	ASIA	Sea-97
3	A/GZ-HX/CHA/2013 (KJ646647)	CHA13-AG	636	635	0	99.84	0.16	ASIA	Sea-97
4	A/GZ-JC/CHA/2013 (KJ646650)	CHA13-AJ	636	635	0	99.84	0.16	ASIA	Sea-97
5	A/GZ-ZB/CHA/2013 (KJ646649)	CHA13-AI	636	635	0	99.84	0.16	ASIA	Sea-97
6	A/GZ-WD/CHA/2013 (KJ646648)	CHA13-AH	636	634	0	99.69	0.31	ASIA	Sea-97
7	A/GZ-XF/CHA/2013 (KJ646657)	CHA13-AL	636	634	0	99.69	0.31	ASIA	Sea-97
8	A/Amur/2/RUS/2013 (ARRIAH)	RUS13-AH	633	628	0	99.21	0.79	ASIA	Sea-97
9	A/Amur/4/RUS/2013 (ARRIAH)	RUS13-AJ	633	628	0	99.21	0.79	ASIA	Sea-97
10	A/Amur/RUS/2013* (ARRIAH)	RUS13-AG	633	628	0	99.21	0.79	ASIA	Sea-97
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/TAI/7/2003 (HQ116312)	TAI03-07	633	594	0	93.84	6.16	ASIA	Sea-97
2	A/TAI/2/97 (EF208778)	TAI97-02	633	574	0	90.68	9.32	ASIA	Sea-97
3	A/TAI/118/87* (EF208777)	TAI87-AD	633	555	0	87.68	12.32	ASIA	Thai-87
4	A22/IRQ/64 (AY593763)	IRQ64--A	636	524	0	82.39	17.61	ASIA	A22
5	A/IRN/2/87 (EF208770)	IRN87-02	633	519	0	81.99	18.01	ASIA	Iran-87
6	A/GHA/16/73 (KF561698)	GHA73-16	633	515	0	81.36	18.64	AFRICA	G-VI
7	A/IRN/78/2009	IRN09-78	636	517	0	81.29	18.71	ASIA	Iran-05 ^{FAR-09}
8	A15/Bangkok/TAI/60 (AY593755)	TAI60--D	636	517	0	81.29	18.71	ASIA	A15
9	A/IRN/1/2011	IRN11-01	636	515	0	80.97	19.03	ASIA	Iran-05 ^{FAR-11}
10	A/IRN/1/96 (EF208771)	IRN96-01	635	514	1	80.94	19.06	ASIA	Iran-96

nt, nucleotides

*, not a WRLFMD reference number

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Serotype: A	Report date: 09/06/2014
WRLFMD Ref No: GZ-YA/CHA/2013	Reported by: N.J. Knowles
Batch No: WRLMEG/2014/00012	Checked by: K. Bachanek-Bankowska
Sender Ref: GZ-YA	
Location: GuiZhou Province, China	Topotype: ASIA
Date collected: 04/05/2013	Genotype/strain: Sea-97
Date received by WRLFMD: 07/06/2014	Sequence filename: CHA13-AF.SEQ
Date received for sequencing: n/a	Date sequence last updated: 09/06/2014
Species: Cow	No. of Nt determined: 636
Material used: Not known	No. of ambiguities: 0
Region sequenced: VP1	Gene length: 636
RT-PCR primers: Not known	Total no. of comparisons: 1937
	Min. no. of nt for comparison: 600
	Total turn-around time: 2 days
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Most Closely Related Viruses									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	A/GZ-BY/CHA/2013 (KJ646645)	CHA13-AE	636	636	0	100.00	0.00	ASIA	Sea-97
2	A/GZ-GY/CHA/2013 (KJ646651)	CHA13-AK	636	636	0	100.00	0.00	ASIA	Sea-97
3	A/GZ-HX/CHA/2013 (KJ646647)	CHA13-AG	636	635	0	99.84	0.16	ASIA	Sea-97
4	A/GZ-JC/CHA/2013 (KJ646650)	CHA13-AJ	636	635	0	99.84	0.16	ASIA	Sea-97
5	A/GZ-ZB/CHA/2013 (KJ646649)	CHA13-AI	636	635	0	99.84	0.16	ASIA	Sea-97
6	A/GZ-WD/CHA/2013 (KJ646648)	CHA13-AH	636	634	0	99.69	0.31	ASIA	Sea-97
7	A/GZ-XF/CHA/2013 (KJ646657)	CHA13-AL	636	634	0	99.69	0.31	ASIA	Sea-97
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2	A/TAI/2/97 (EF208778)	TAI97-02	633	574	0	90.68	9.32	ASIA	Sea-97
3	A/TAI/118/87* (EF208777)	TAI87-AD	633	555	0	87.68	12.32	ASIA	Thai-87
4	A22/IRQ/64 (AY593763)	IRQ64--A	636	524	0	82.39	17.61	ASIA	A22
5	A/IRN/2/87 (EF208770)	IRN87-02	633	519	0	81.99	18.01	ASIA	Iran-87
6	A/GHA/16/73 (KF561698)	GHA73-16	633	515	0	81.36	18.64	AFRICA	G-VI
7	A/IRN/78/2009	IRN09-78	636	517	0	81.29	18.71	ASIA	Iran-05 ^{FAR-09}
8	A15/Bangkok/TAI/60 (AY593755)	TAI60--D	636	517	0	81.29	18.71	ASIA	A15
9	A/IRN/1/2011	IRN11-01	636	515	0	80.97	19.03	ASIA	Iran-05 ^{FAR-11}
10	A/IRN/1/96 (EF208771)	IRN96-01	635	514	1	80.94	19.06	ASIA	Iran-96

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Serotype: A	Report date: 09/06/2014
WRLFMD Ref No: GZ-HX/CHA/2013	Reported by: N.J. Knowles
Batch No: WRLMEG/2014/00012	Checked by: K. Bachanek-Bankowska
Sender Ref: GZ-HX	
Location: GuiZhou Province, China	Topotype: ASIA
Date collected: 04/05/2013	Genotype/strain: Sea-97
Date received by WRLFMD: 07/06/2014	Sequence filename: CHA13-AG.SEQ
Date received for sequencing: n/a	Date sequence last updated: 09/06/2014
Species: Cow	No. of Nt determined: 636
Material used: Not known	No. of ambiguities: 0
Region sequenced: VP1	Gene length: 636
RT-PCR primers: Not known	Total no. of comparisons: 1937
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2	A/GZ-ZB/CHA/2013 (KJ646649)	CHA13-AI	636	636	0	100.00	0.00	ASIA	Sea-97
3	A/GZ-BY/CHA/2013 (KJ646645)	CHA13-AE	636	635	0	99.84	0.16	ASIA	Sea-97
4	A/GZ-GY/CHA/2013 (KJ646651)	CHA13-AK	636	635	0	99.84	0.16	ASIA	Sea-97
5	A/GZ-WD/CHA/2013 (KJ646648)	CHA13-AH	636	635	0	99.84	0.16	ASIA	Sea-97
6	A/GZ-XF/CHA/2013 (KJ646657)	CHA13-AL	636	635	0	99.84	0.16	ASIA	Sea-97
7	A/GZ-YA/CHA/2013 (KJ646646)	CHA13-AF	636	635	0	99.84	0.16	ASIA	Sea-97
8	A/Amur/2/RUS/2013 (ARRIAH)	RUS13-AH	633	629	0	99.37	0.63	ASIA	Sea-97
9	A/Amur/4/RUS/2013 (ARRIAH)	RUS13-AJ	633	629	0	99.37	0.63	ASIA	Sea-97
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4	A22/IRQ/64 (AY593763)	IRQ64--A	636	525	0	82.55	17.45	ASIA	A22
5	A/IRN/2/87 (EF208770)	IRN87-02	633	520	0	82.15	17.85	ASIA	Iran-87
6	A/GHA/16/73 (KF561698)	GHA73-16	633	516	0	81.52	18.48	AFRICA	G-VI
7	A/IRN/78/2009	IRN09-78	636	518	0	81.45	18.55	ASIA	Iran-05 ^{FAR-09}
8	A15/Bangkok/TAI/60 (AY593755)	TAI60--D	636	518	0	81.45	18.55	ASIA	A15
9	A/IRN/1/2011	IRN11-01	636	516	0	81.13	18.87	ASIA	Iran-05 ^{FAR-11}
10	A/IRN/1/96 (EF208771)	IRN96-01	635	515	1	81.10	18.90	ASIA	Iran-96

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WRLFMD Ref No: GZ-WD/CHA/2013	Reported by: N.J. Knowles
Batch No: WRLMEG/2014/00012	Checked by: K. Bachanek-Bankowska
Sender Ref: GZ-WD	
Location: GuiZhou Province, China	Topotype: ASIA
Date collected: 04/05/2013	Genotype/strain: Sea-97
Date received by WRLFMD: 07/06/2014	Sequence filename: CHA13-AH.SEQ
Date received for sequencing: n/a	Date sequence last updated: 09/06/2014
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3	A/GZ-JC/CHA/2013 (KJ646650)	CHA13-AJ	636	635	0	99.84	0.16	ASIA	Sea-97
4	A/GZ-ZB/CHA/2013 (KJ646649)	CHA13-AI	636	635	0	99.84	0.16	ASIA	Sea-97
5	A/GZ-BY/CHA/2013 (KJ646645)	CHA13-AE	636	634	0	99.69	0.31	ASIA	Sea-97
6	A/GZ-GY/CHA/2013 (KJ646651)	CHA13-AK	636	634	0	99.69	0.31	ASIA	Sea-97
7	A/GZ-YA/CHA/2013 (KJ646646)	CHA13-AF	636	634	0	99.69	0.31	ASIA	Sea-97
8	A/Amur/2/RUS/2013 (ARRIAH)	RUS13-AH	633	628	0	99.21	0.79	ASIA	Sea-97
9	A/Amur/4/RUS/2013 (ARRIAH)	RUS13-AJ	633	628	0	99.21	0.79	ASIA	Sea-97
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Serotype: A	Report date: 09/06/2014
WRLFMD Ref No: GZ-ZB/CHA/2013	Reported by: N.J. Knowles
Batch No: WRLMEG/2014/00012	Checked by: K. Bachanek-Bankowska
Sender Ref: GZ-ZB	
Location: GuiZhou Province, China	Topotype: ASIA
Date collected: 04/05/2013	Genotype/strain: Sea-97
Date received by WRLFMD: 07/06/2014	Sequence filename: CHA13-AI.SEQ
Date received for sequencing: n/a	Date sequence last updated: 09/06/2014
Species: Cow	No. of Nt determined: 636
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3	A/GZ-BY/CHA/2013 (KJ646645)	CHA13-AE	636	635	0	99.84	0.16	ASIA	Sea-97
4	A/GZ-GY/CHA/2013 (KJ646651)	CHA13-AK	636	635	0	99.84	0.16	ASIA	Sea-97
5	A/GZ-WD/CHA/2013 (KJ646648)	CHA13-AH	636	635	0	99.84	0.16	ASIA	Sea-97
6	A/GZ-XF/CHA/2013 (KJ646657)	CHA13-AL	636	635	0	99.84	0.16	ASIA	Sea-97
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Sender Ref: GZ-JC	
Location: GuiZhou Province, China	Topotype: ASIA
Date collected: 04/05/2013	Genotype/strain: Sea-97
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5	A/GZ-WD/CHA/2013 (KJ646648)	CHA13-AH	636	635	0	99.84	0.16	ASIA	Sea-97
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4	A22/IRQ/64 (AY593763)	IRQ64--A	636	525	0	82.55	17.45	ASIA	A22
5	A/IRN/2/87 (EF208770)	IRN87-02	633	520	0	82.15	17.85	ASIA	Iran-87
6	A/GHA/16/73 (KF561698)	GHA73-16	633	516	0	81.52	18.48	AFRICA	G-VI
7	A/IRN/78/2009	IRN09-78	636	518	0	81.45	18.55	ASIA	Iran-05 ^{FAR-09}
8	A15/Bangkok/TAI/60 (AY593755)	TAI60--D	636	518	0	81.45	18.55	ASIA	A15
9	A/IRN/1/2011	IRN11-01	636	516	0	81.13	18.87	ASIA	Iran-05 ^{FAR-11}
10	A/IRN/1/96 (EF208771)	IRN96-01	635	515	1	81.10	18.90	ASIA	Iran-96

nt, nucleotides

*, not a WRLFMD reference number

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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: 09/06/2014
WRLFMD Ref No: GZ-GY/CHA/2013	Reported by: N.J. Knowles
Batch No: WRLMEG/2014/00012	Checked by: K. Bachanek-Bankowska
Sender Ref: GZ-GY	
Location: GuiZhou Province, China	Topotype: ASIA
Date collected: 04/05/2013	Genotype/strain: Sea-97
Date received by WRLFMD: 07/06/2014	Sequence filename: CHA13-AK.SEQ
Date received for sequencing: n/a	Date sequence last updated: 09/06/2014
Species: Cow	No. of Nt determined: 636
Material used: Not known	No. of ambiguities: 0
Region sequenced: VP1	Gene length: 636
RT-PCR primers: Not known	Total no. of comparisons: 1937
	Min. no. of nt for comparison: 600
	Total turn-around 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/GZ-BY/CHA/2013 (KJ646645)	CHA13-AE	636	636	0	100.00	0.00	ASIA	Sea-97
2	A/GZ-YA/CHA/2013 (KJ646646)	CHA13-AF	636	636	0	100.00	0.00	ASIA	Sea-97
3	A/GZ-HX/CHA/2013 (KJ646647)	CHA13-AG	636	635	0	99.84	0.16	ASIA	Sea-97
4	A/GZ-JC/CHA/2013 (KJ646650)	CHA13-AJ	636	635	0	99.84	0.16	ASIA	Sea-97
5	A/GZ-ZB/CHA/2013 (KJ646649)	CHA13-AI	636	635	0	99.84	0.16	ASIA	Sea-97
6	A/GZ-WD/CHA/2013 (KJ646648)	CHA13-AH	636	634	0	99.69	0.31	ASIA	Sea-97
7	A/GZ-XF/CHA/2013 (KJ646657)	CHA13-AL	636	634	0	99.69	0.31	ASIA	Sea-97
8	A/Amur/2/RUS/2013 (ARRIAH)	RUS13-AH	633	628	0	99.21	0.79	ASIA	Sea-97
9	A/Amur/4/RUS/2013 (ARRIAH)	RUS13-AJ	633	628	0	99.21	0.79	ASIA	Sea-97
10	A/Amur/RUS/2013* (ARRIAH)	RUS13-AG	633	628	0	99.21	0.79	ASIA	Sea-97
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/TAI/7/2003 (HQ116312)	TAI03-07	633	594	0	93.84	6.16	ASIA	Sea-97
2	A/TAI/2/97 (EF208778)	TAI97-02	633	574	0	90.68	9.32	ASIA	Sea-97
3	A/TAI/118/87* (EF208777)	TAI87-AD	633	555	0	87.68	12.32	ASIA	Thai-87
4	A22/IRQ/64 (AY593763)	IRQ64--A	636	524	0	82.39	17.61	ASIA	A22
5	A/IRN/2/87 (EF208770)	IRN87-02	633	519	0	81.99	18.01	ASIA	Iran-87
6	A/GHA/16/73 (KF561698)	GHA73-16	633	515	0	81.36	18.64	AFRICA	G-VI
7	A/IRN/78/2009	IRN09-78	636	517	0	81.29	18.71	ASIA	Iran-05 ^{FAR-09}
8	A15/Bangkok/TAI/60 (AY593755)	TAI60--D	636	517	0	81.29	18.71	ASIA	A15
9	A/IRN/1/2011	IRN11-01	636	515	0	80.97	19.03	ASIA	Iran-05 ^{FAR-11}
10	A/IRN/1/96 (EF208771)	IRN96-01	635	514	1	80.94	19.06	ASIA	Iran-96

nt, nucleotides

*, not a WRLFMD reference number

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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: 09/06/2014
WRLFMD Ref No: GZ-XF/CHA/2013	Reported by: N.J. Knowles
Batch No: WRLMEG/2014/00012	Checked by: K. Bachanek-Bankowska
Sender Ref: GZ-XF	
Location: GuiZhou Province, China	Topotype: ASIA
Date collected: 04/05/2013	Genotype/strain: Sea-97
Date received by WRLFMD: 07/06/2014	Sequence filename: CHA13-AL.SEQ
Date received for sequencing: n/a	Date sequence last updated: 09/06/2014
Species: Cow	No. of Nt determined: 636
Material used: Not known	No. of ambiguities: 0
Region sequenced: VP1	Gene length: 636
RT-PCR primers: Not known	Total no. of comparisons: 1937
	Min. no. of nt for comparison: 600
	Total turn-around 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/GZ-WD/CHA/2013 (KJ646648)	CHA13-AH	636	636	0	100.00	0.00	ASIA	Sea-97
2	A/GZ-HX/CHA/2013 (KJ646647)	CHA13-AG	636	635	0	99.84	0.16	ASIA	Sea-97
3	A/GZ-JC/CHA/2013 (KJ646650)	CHA13-AJ	636	635	0	99.84	0.16	ASIA	Sea-97
4	A/GZ-ZB/CHA/2013 (KJ646649)	CHA13-AI	636	635	0	99.84	0.16	ASIA	Sea-97
5	A/GZ-BY/CHA/2013 (KJ646645)	CHA13-AE	636	634	0	99.69	0.31	ASIA	Sea-97
6	A/GZ-GY/CHA/2013 (KJ646651)	CHA13-AK	636	634	0	99.69	0.31	ASIA	Sea-97
7	A/GZ-YA/CHA/2013 (KJ646646)	CHA13-AF	636	634	0	99.69	0.31	ASIA	Sea-97
8	A/Amur/2/RUS/2013 (ARRIAH)	RUS13-AH	633	628	0	99.21	0.79	ASIA	Sea-97
9	A/Amur/4/RUS/2013 (ARRIAH)	RUS13-AJ	633	628	0	99.21	0.79	ASIA	Sea-97
10	A/Amur/RUS/2013* (ARRIAH)	RUS13-AG	633	628	0	99.21	0.79	ASIA	Sea-97
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/TAI/7/2003 (HQ116312)	TAI03-07	633	594	0	93.84	6.16	ASIA	Sea-97
2	A/TAI/2/97 (EF208778)	TAI97-02	633	574	0	90.68	9.32	ASIA	Sea-97
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4	A22/IRQ/64 (AY593763)	IRQ64--A	636	525	0	82.55	17.45	ASIA	A22
5	A/IRN/2/87 (EF208770)	IRN87-02	633	519	0	81.99	18.01	ASIA	Iran-87
6	A/GHA/16/73 (KF561698)	GHA73-16	633	516	0	81.52	18.48	AFRICA	G-VI
7	A15/Bangkok/TAI/60 (AY593755)	TAI60--D	636	518	0	81.45	18.55	ASIA	A15
8	A/IRN/78/2009	IRN09-78	636	517	0	81.29	18.71	ASIA	Iran-05 ^{FAR-09}
9	A/IRN/1/2011	IRN11-01	636	515	0	80.97	19.03	ASIA	Iran-05 ^{FAR-11}
10	A/IRN/1/96 (EF208771)	IRN96-01	635	514	1	80.94	19.06	ASIA	Iran-96

nt, nucleotides

*, not a WRLFMD reference number

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Report on FMDV A in P.R. China in 2013

Batch: WRLMEG/2014/00012

◆ 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

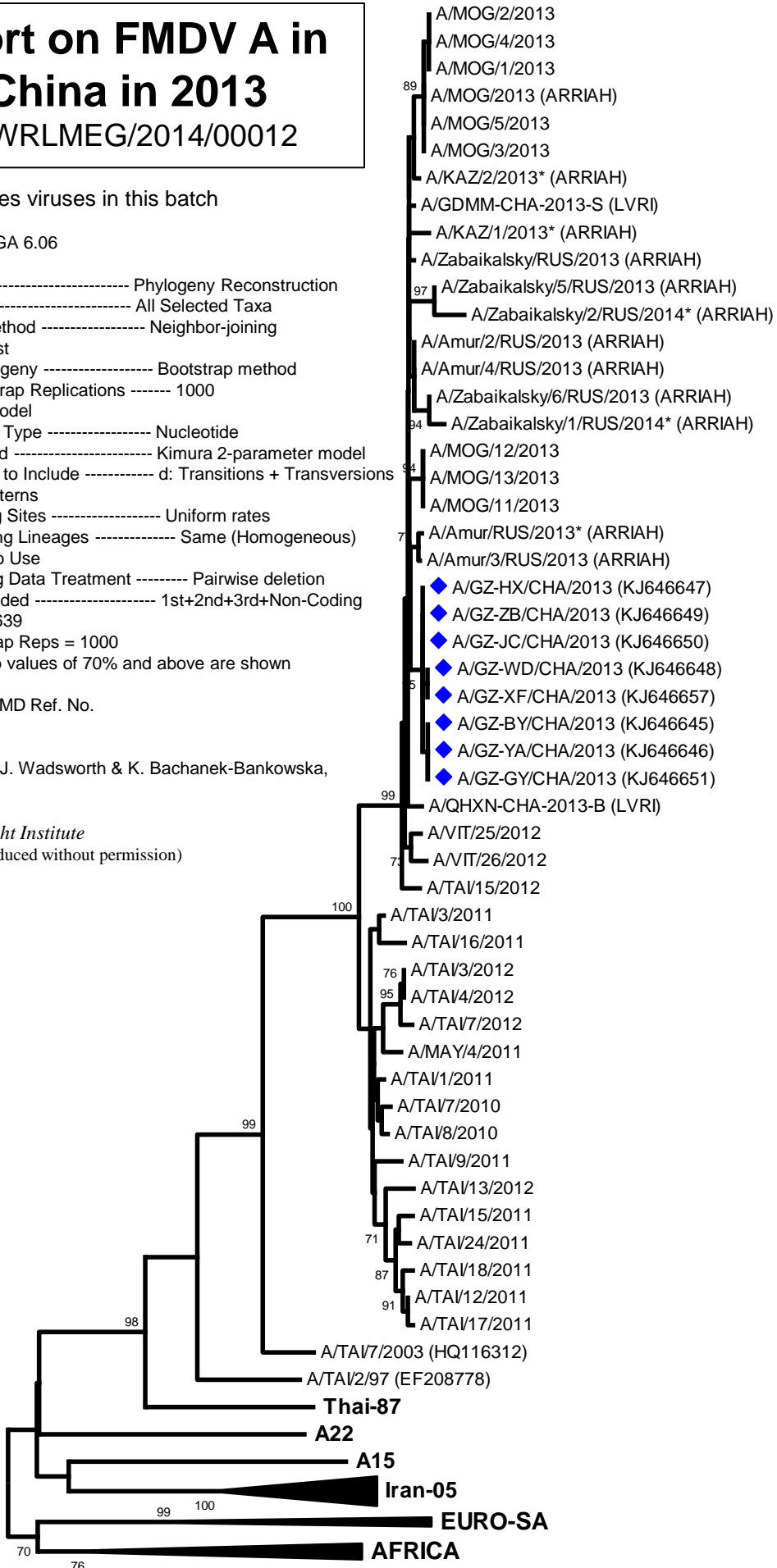
Only bootstrap values of 70% and above are shown

*, not a WRLFMD Ref. No.

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

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Sea-97

ASIA

0.02