

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

Genotyping Report

Report Date for this Batch: 6 November 2014

FMDV type SAT 1
Country: Botswana
Period: 2014
No. of samples: 3

BATCH: WRLFMD/2014/00031



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FAO World Reference Laboratory for FMD Genotyping Report

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Serotype: SAT1 WRLFMD Ref No: BOT/2/2014 Batch No: WRLFMD/2014/00031 Sender Ref: BOT4/14 Location: Mohembo East, Shakawe, Ngamiland, Botswana Date collected: 26/06/2014 Date received by WRLFMD: 13/10/2014 Date received for sequencing: 27/10/2014 Species: Bovine Material used: RS2 21/10/2014 Region sequenced: VP1 RT-PCR primers: SAT1-1C559F/SAT-2B208R SAT1U-OS/SAT-2B208R	Report date: 06/11/2014 Reported by: N.J. Knowles Checked by: K. Bachanek-Bankowska Topotype: III (WZ) Genotype/strain: unnamed Sequence filename: BOT14-02.SEQ Date sequence last updated: 30/10/2014 No. of Nt determined: 663 No. of ambiguities: 0 Gene length: 663 Total no. of comparisons: 460 Min. no. of nt for comparison: 600 Total turn-around time: 24 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	SAT1/BOT/3/2014	BOT14-03	663	661	0	99.70	0.30	III (WZ)	unnamed
2	SAT1/BOT/5/2014 (BVI)	BOT14-AA	636	634	0	99.69	0.31	III (WZ)	unnamed
3	SAT1/BOT/4/2014	BOT14-04	663	659	0	99.40	0.60	III (WZ)	unnamed
4	SAT1/BOT/6/2014 (BVI)	BOT14-AB	653	649	0	99.39	0.61	III (WZ)	unnamed
5	SAT1/SWA/40/61	SWA61-40	663	588	0	88.69	11.31	III (WZ)	unnamed
6	SAT1/SWA/40/61 (AY593843)	SWA61A40	663	588	0	88.69	11.31	III (WZ)	unnamed
7	SAT1/NAM/307/98* (AY770519)	NAM98-AF	657	582	0	88.58	11.42	III (WZ)	unnamed
8	SAT1/NAM/307/98* (DQ009717)	NAM98-AG	657	581	0	88.43	11.57	III (WZ)	unnamed
9	SAT1/BOT/1/77 (KF219686)	BOT77-01	663	585	0	88.24	11.76	III (WZ)	unnamed
10	SAT1/BOT/17/77 kudu (KF219687)	BOT77-17	663	585	0	88.24	11.76	III (WZ)	unnamed
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	SAT1/BOT/1/77 (KF219686)	BOT77-01	663	585	0	88.24	11.76	III (WZ)	unnamed
2	SAT1/BOT/1/68 (AY593845)	BOT68-C1	663	579	0	87.33	12.67	III (WZ)	unnamed
3	SAT1/BEC/1/48 (AY593838)	BEC48-01	663	558	0	84.16	15.84	III (WZ)	unnamed
4	SAT1/RHO/5/66 (AY593846)	RHO66-05	663	493	0	74.36	25.64	II (SEZ)	unnamed
5	SAT1/RV/11/37 (AY593839)	RHO37-11	663	488	0	73.60	26.40	II (SEZ)	unnamed
6	SAT1/UGA BUFF/21/70 (KF219682)	UGA70-21	663	486	0	73.30	26.70	IV (EA-1)	unnamed
7	SAT1/T155/71 (KF561706)	TAN71155	663	482	0	72.70	27.30	I (NWZ)	unnamed
8	SAT1/ZIM/23/2003 (KF219690)	ZIM03-23	663	471	0	71.04	28.96	I (NWZ)	unnamed
9	SAT1/NIG/11/75 (AF431711)	NIG75-AA	660	467	0	70.76	29.24	V	unnamed
10	SAT1/UGA/13/74 (AY442010)	UGA74S13	663	462	0	69.68	30.32	VII (EA-2)	unnamed

nt, nucleotides

*, not a WRLFMD reference number

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Serotype: SAT1 WRLFMD Ref No: BOT/3/2014 Batch No: WRLFMD/2014/00031 Sender Ref: BOT5/14 Location: Mohembo East, Shakawe, Ngamiland, Botswana Date collected: 26/06/2014 Date received by WRLFMD: 13/10/2014 Date received for sequencing: 27/10/2014 Species: Bovine Material used: BTy1 18/10/2014 Region sequenced: VP1 RT-PCR primers: SAT1-1C559F/SAT-2B208R SAT1U-OS/SAT-2B208R	Report date: 06/11/2014 Reported by: N.J. Knowles Checked by: K. Bachanek-Bankowska Topotype: III (WZ) Genotype/strain: unnamed Sequence filename: BOT14-03.SEQ Date sequence last updated: 30/10/2014 No. of Nt determined: 663 No. of ambiguities: 0 Gene length: 663 Total no. of comparisons: 460 Min. no. of nt for comparison: 600 Total turn-around time: 24 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	SAT1/BOT/5/2014 (BVI)	BOT14-AA	636	636	0	100.00	0.00	III (WZ)	unnamed
2	SAT1/BOT/2/2014	BOT14-02	663	661	0	99.70	0.30	III (WZ)	unnamed
3	SAT1/BOT/4/2014	BOT14-04	663	661	0	99.70	0.30	III (WZ)	unnamed
4	SAT1/BOT/6/2014 (BVI)	BOT14-AB	653	651	0	99.69	0.31	III (WZ)	unnamed
5	SAT1/NAM/307/98* (AY770519)	NAM98-AF	657	584	0	88.89	11.11	III (WZ)	unnamed
6	SAT1/SWA/40/61	SWA61-40	663	588	0	88.69	11.31	III (WZ)	unnamed
7	SAT1/SWA/40/61 (AY593843)	SWA61A40	663	588	0	88.69	11.31	III (WZ)	unnamed
8	SAT1/NAM/307/98* (DQ009717)	NAM98-AG	657	581	0	88.43	11.57	III (WZ)	unnamed
9	SAT1/BOT/1/77 (KF219686)	BOT77-01	663	585	0	88.24	11.76	III (WZ)	unnamed
10	SAT1/BOT/17/77 kudu (KF219687)	BOT77-17	663	585	0	88.24	11.76	III (WZ)	unnamed
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1	SAT1/BOT/1/77 (KF219686)	BOT77-01	663	585	0	88.24	11.76	III (WZ)	unnamed
2	SAT1/BOT/1/68 (AY593845)	BOT68-C1	663	579	0	87.33	12.67	III (WZ)	unnamed
3	SAT1/BEC/1/48 (AY593838)	BEC48-01	663	558	0	84.16	15.84	III (WZ)	unnamed
4	SAT1/RHO/5/66 (AY593846)	RHO66-05	663	493	0	74.36	25.64	II (SEZ)	unnamed
5	SAT1/RV/11/37 (AY593839)	RHO37-11	663	488	0	73.60	26.40	II (SEZ)	unnamed
6	SAT1/UGA BUFF/21/70 (KF219682)	UGA70-21	663	486	0	73.30	26.70	IV (EA-1)	unnamed
7	SAT1/T155/71 (KF561706)	TAN71155	663	482	0	72.70	27.30	I (NWZ)	unnamed
8	SAT1/NIG/11/75 (AF431711)	NIG75-AA	660	469	0	71.06	28.94	V	unnamed
9	SAT1/ZIM/23/2003 (KF219690)	ZIM03-23	663	471	0	71.04	28.96	I (NWZ)	unnamed
10	SAT1/UGA/13/74 (AY442010)	UGA74S13	663	462	0	69.68	30.32	VII (EA-2)	unnamed

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Serotype: SAT1 WRLFMD Ref No: BOT/4/2014 Batch No: WRLFMD/2014/00031 Sender Ref: BOT6/14 Location: Mohembo East, Shakawe, Ngamiland, Botswana Date collected: 26/06/2014 Date received by WRLFMD: 13/10/2014 Date received for sequencing: 27/10/2014 Species: Bovine Material used: BTy1 18/10/2014 Region sequenced: VP1 RT-PCR primers: SAT1-1C559F/SAT-2B208R SAT1U-OS/SAT-2B208R	Report date: 06/11/2014 Reported by: N.J. Knowles Checked by: K. Bachanek-Bankowska Topotype: III (WZ) Genotype/strain: unnamed Sequence filename: BOT14-04.SEQ Date sequence last updated: 30/10/2014 No. of Nt determined: 663 No. of ambiguities: 0 Gene length: 663 Total no. of comparisons: 460 Min. no. of nt for comparison: 600 Total turn-around time: 24 days Sequencing time: 10 days
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2	SAT1/BOT/3/2014	BOT14-03	663	661	0	99.70	0.30	III (WZ)	unnamed
3	SAT1/BOT/5/2014 (BVI)	BOT14-AA	636	634	0	99.69	0.31	III (WZ)	unnamed
4	SAT1/BOT/2/2014	BOT14-02	663	659	0	99.40	0.60	III (WZ)	unnamed
5	SAT1/NAM/307/98* (AY770519)	NAM98-AF	657	582	0	88.58	11.42	III (WZ)	unnamed
6	SAT1/SWA/40/61	SWA61-40	663	586	0	88.39	11.61	III (WZ)	unnamed
7	SAT1/SWA/40/61 (AY593843)	SWA61A40	663	586	0	88.39	11.61	III (WZ)	unnamed
8	SAT1/BOT/1/77 (KF219686)	BOT77-01	663	585	0	88.24	11.76	III (WZ)	unnamed
9	SAT1/BOT/17/77 kudu (KF219687)	BOT77-17	663	585	0	88.24	11.76	III (WZ)	unnamed
10	SAT1/BOT/24/77 (KF219688)	BOT77-24	663	585	0	88.24	11.76	III (WZ)	unnamed
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(see http://www.wrlfmd.org/fmd_genotyping/prototypes.htm)									
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3	SAT1/BEC/1/48 (AY593838)	BEC48-01	663	558	0	84.16	15.84	III (WZ)	unnamed
4	SAT1/RHO/5/66 (AY593846)	RHO66-05	663	493	0	74.36	25.64	II (SEZ)	unnamed
5	SAT1/RV/11/37 (AY593839)	RHO37-11	663	487	0	73.45	26.55	II (SEZ)	unnamed
6	SAT1/UGA BUFF/21/70 (KF219682)	UGA70-21	663	486	0	73.30	26.70	IV (EA-1)	unnamed
7	SAT1/T155/71 (KF561706)	TAN71155	663	483	0	72.85	27.15	I (NWZ)	unnamed
8	SAT1/ZIM/23/2003 (KF219690)	ZIM03-23	663	472	0	71.19	28.81	I (NWZ)	unnamed
9	SAT1/NIG/11/75 (AF431711)	NIG75-AA	660	469	0	71.06	28.94	V	unnamed
10	SAT1/UGA/13/74 (AY442010)	UGA74S13	663	463	0	69.83	30.17	VII (EA-2)	unnamed

nt, nucleotides

*, not a WRLFMD reference number

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Report on FMDV SAT 1 in Botswana in 2014

Batch: WRLFMD/2014/00031

◆ 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 : 663

No Of Bootstrap Reps = 1000

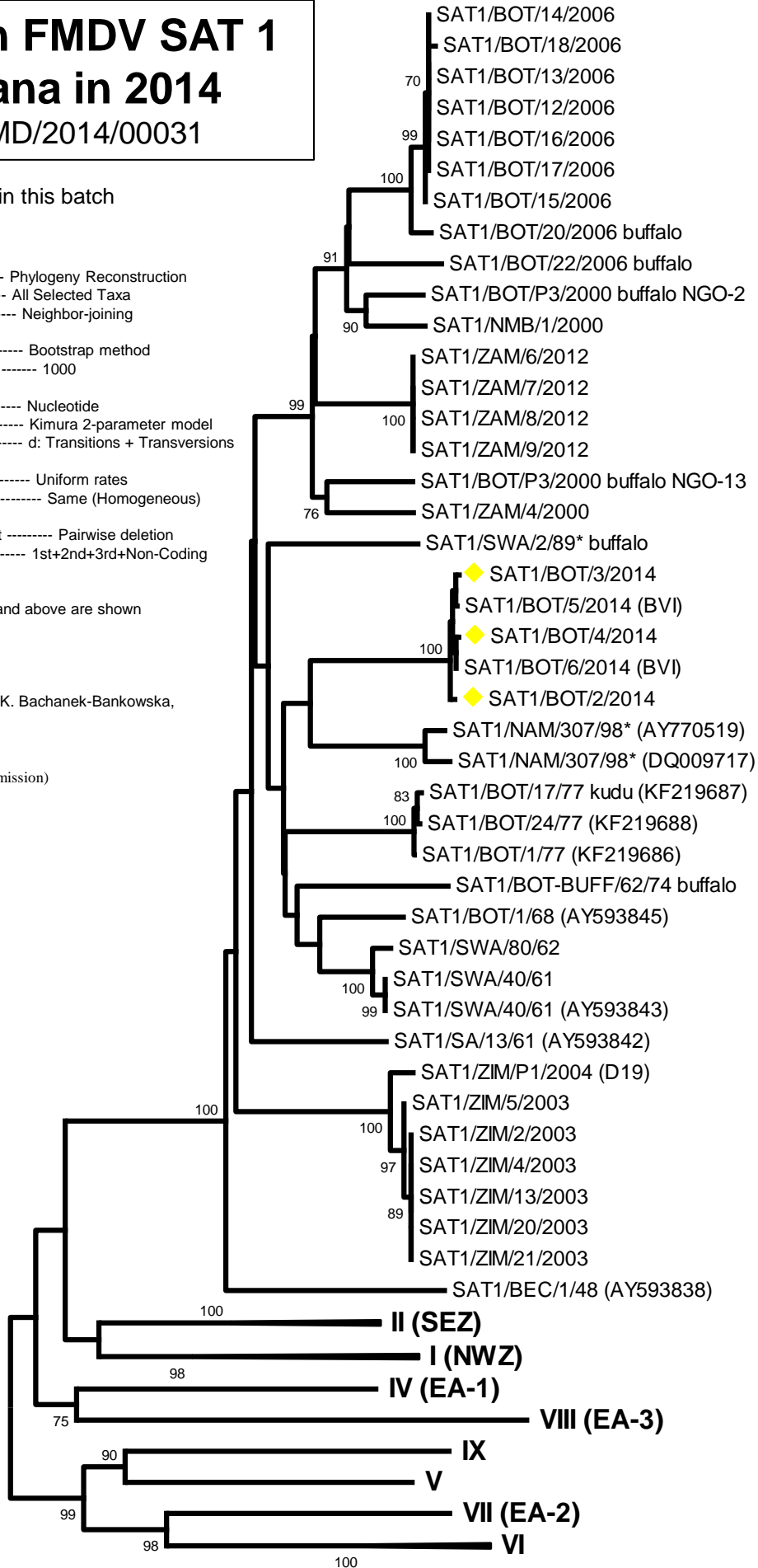
Only bootstrap values of 70% and above are shown

*, not a WRLFMD Ref. No.

N.J. Knowles, J. Wadsworth & K. Bachanek-Bankowska,
06 November 2014

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III (WZ)

0.05