

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

Genotyping Report

Report Date for this Batch: 13 October 2013

FMDV type SAT 1

Country: Kenya

Period: 2013

No. of samples: 7

BATCH: WRLFMD/2013/00019



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FAO World Reference Laboratory for FMD Genotyping Report

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

Page 1 of 1

Serotype: SAT1 WRLFMD Ref No: KEN/4/2013 Batch No: WRLFMD/2013/00019 Sender Ref: K15/13 Location: Ngata, Nakuru District, Rift Valley Province, Kenya Date collected: 20/01/2013 Date received by WRLFMD: 25/09/2013 Date received for sequencing: 01/10/2013 Species: Bovine Material used: BTy1 28/09/2013 Region sequenced: VP1 RT-PCR primers: SAT1-1C559F/SAT-2B208R SAT1U-OS/SAT-2B208R	Report date: 13/10/2013 Reported by: N.J. Knowles Checked by: K. Bachanek-Bankowska Topotype: I (NWZ) Genotype/strain: unnamed Sequence filename: KEN13-04.SEQ Date sequence last updated: 13/10/2013 No. of Nt determined: 663 No. of ambiguities: 0 Gene length: 663 Total no. of comparisons: 440 Min. no. of nt for comparison: 600 Total turn-around time: 18 days Sequencing time: 12 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/KEN/10/2013	KEN13-10	663	663	0	100.00	0.00	I (NWZ)	unnamed
2	SAT1/KEN/5/2013	KEN13-05	663	663	0	100.00	0.00	I (NWZ)	unnamed
3	SAT1/KEN/6/2013	KEN13-06	663	663	0	100.00	0.00	I (NWZ)	unnamed
4	SAT1/KEN/7/2013	KEN13-07	663	663	0	100.00	0.00	I (NWZ)	unnamed
5	SAT1/KEN/8/2013	KEN13-08	663	663	0	100.00	0.00	I (NWZ)	unnamed
6	SAT1/KEN/9/2013	KEN13-09	663	663	0	100.00	0.00	I (NWZ)	unnamed
7	SAT1/TAN/19/99	TAN99-19	663	613	0	92.46	7.54	I (NWZ)	unnamed
8	SAT1/TAN/21/99	TAN99-21	663	613	0	92.46	7.54	I (NWZ)	unnamed
9	SAT1/TAN/25/99	TAN99-25	663	613	0	92.46	7.54	I (NWZ)	unnamed
10	SAT1/TAN/60/99	TAN99-60	663	613	0	92.46	7.54	I (NWZ)	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/T155/71	TAN71155	663	583	0	87.93	12.07	I (NWZ)	unnamed
2	SAT1/ZIM/23/2003 (KF219690)	ZIM03-23	663	530	0	79.94	20.06	I (NWZ)	unnamed
3	SAT1/RV/11/37 (AY593839)	RHO37-11	663	513	0	77.38	22.62	II (SEZ)	unnamed
4	SAT1/RHO/5/66 (AY593846)	RHO66-05	663	507	0	76.47	23.53	II (SEZ)	unnamed
5	SAT1/UGA BUFF/21/70 (KF219682)	UGA70-21	663	499	0	75.26	24.74	IV (EA-1)	unnamed
6	SAT1/BOT/1/77 (KF219686)	BOT77-01	663	497	0	74.96	25.04	III (WZ)	unnamed
7	SAT1/BOT/1/68 (AY593845)	BOT68-C1	663	489	0	73.76	26.24	III (WZ)	unnamed
8	SAT1/BEC/1/48 (AY593838)	BEC48-01	663	479	0	72.25	27.75	III (WZ)	unnamed
9	SAT1/SUD/3/76 (DQ009725)	SUD76M03	657	469	0	71.39	28.61	VI	unnamed
10	SAT1/UGA/1/97 (AY442012)	UGA97S01	663	472	0	71.19	28.81	VIII (EA-3)	unnamed

nt, nucleotides

*, not a WRLFMD reference number

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

Page 1 of 1

Serotype: SAT1 WRLFMD Ref No: KEN/5/2013 Batch No: WRLFMD/2013/00019 Sender Ref: K16/13 Location: Ngata, Nakuru District, Rift Valley Province, Kenya Date collected: 20/01/2013 Date received by WRLFMD: 25/09/2013 Date received for sequencing: 01/10/2013 Species: Bovine Material used: BTy1 28/09/2013 Region sequenced: VP1 RT-PCR primers: SAT1-1C559F/SAT-2B208R SAT1U-OS/SAT-2B208R	Report date: 13/10/2013 Reported by: N.J. Knowles Checked by: K. Bachanek-Bankowska Topotype: I (NWZ) Genotype/strain: unnamed Sequence filename: KEN13-05.SEQ Date sequence last updated: 13/10/2013 No. of Nt determined: 663 No. of ambiguities: 0 Gene length: 663 Total no. of comparisons: 440 Min. no. of nt for comparison: 600 Total turn-around time: 18 days Sequencing time: 12 days
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2	SAT1/KEN/4/2013	KEN13-04	663	663	0	100.00	0.00	I (NWZ)	unnamed
3	SAT1/KEN/6/2013	KEN13-06	663	663	0	100.00	0.00	I (NWZ)	unnamed
4	SAT1/KEN/7/2013	KEN13-07	663	663	0	100.00	0.00	I (NWZ)	unnamed
5	SAT1/KEN/8/2013	KEN13-08	663	663	0	100.00	0.00	I (NWZ)	unnamed
6	SAT1/KEN/9/2013	KEN13-09	663	663	0	100.00	0.00	I (NWZ)	unnamed
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3	SAT1/RV/11/37 (AY593839)	RHO37-11	663	513	0	77.38	22.62	II (SEZ)	unnamed
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6	SAT1/BOT/1/77 (KF219686)	BOT77-01	663	497	0	74.96	25.04	III (WZ)	unnamed
7	SAT1/BOT/1/68 (AY593845)	BOT68-C1	663	489	0	73.76	26.24	III (WZ)	unnamed
8	SAT1/BEC/1/48 (AY593838)	BEC48-01	663	479	0	72.25	27.75	III (WZ)	unnamed
9	SAT1/SUD/3/76 (DQ009725)	SUD76M03	657	469	0	71.39	28.61	VI	unnamed
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IAH-P-EP-MEG-FOR-005-3

Page 1 of 1

Serotype: SAT1 WRLFMD Ref No: KEN/6/2013 Batch No: WRLFMD/2013/00019 Sender Ref: K10/13 Location: Ngata, Nakuru District, Rift Valley Province, Kenya Date collected: 22/01/2013 Date received by WRLFMD: 25/09/2013 Date received for sequencing: 01/10/2013 Species: Bovine Material used: BTy1 28/09/2013 Region sequenced: VP1 RT-PCR primers: SAT1-1C559F/SAT-2B208R SAT1U-OS/SAT-2B208R	Report date: 13/10/2013 Reported by: N.J. Knowles Checked by: K. Bachanek-Bankowska Topotype: I (NWZ) Genotype/strain: unnamed Sequence filename: KEN13-06.SEQ Date sequence last updated: 13/10/2013 No. of Nt determined: 663 No. of ambiguities: 0 Gene length: 663 Total no. of comparisons: 440 Min. no. of nt for comparison: 600 Total turn-around time: 18 days Sequencing time: 12 days
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4	SAT1/KEN/7/2013	KEN13-07	663	663	0	100.00	0.00	I (NWZ)	unnamed
5	SAT1/KEN/8/2013	KEN13-08	663	663	0	100.00	0.00	I (NWZ)	unnamed
6	SAT1/KEN/9/2013	KEN13-09	663	663	0	100.00	0.00	I (NWZ)	unnamed
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IAH-P-EP-MEG-FOR-005-3

Page 1 of 1

Serotype: SAT1 WRLFMD Ref No: KEN/7/2013 Batch No: WRLFMD/2013/00019 Sender Ref: K11/13 Location: Ngata, Nakuru District, Rift Valley Province, Kenya Date collected: 22/01/2013 Date received by WRLFMD: 25/09/2013 Date received for sequencing: 01/10/2013 Species: Bovine Material used: BTy1 28/09/2013 Region sequenced: VP1 RT-PCR primers: SAT1-1C559F/SAT-2B208R SAT1U-OS/SAT-2B208R	Report date: 13/10/2013 Reported by: N.J. Knowles Checked by: K. Bachanek-Bankowska Topotype: I (NWZ) Genotype/strain: unnamed Sequence filename: KEN13-07.SEQ Date sequence last updated: 13/10/2013 No. of Nt determined: 663 No. of ambiguities: 0 Gene length: 663 Total no. of comparisons: 440 Min. no. of nt for comparison: 600 Total turn-around time: 18 days Sequencing time: 12 days
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2	SAT1/KEN/4/2013	KEN13-04	663	663	0	100.00	0.00	I (NWZ)	unnamed
3	SAT1/KEN/5/2013	KEN13-05	663	663	0	100.00	0.00	I (NWZ)	unnamed
4	SAT1/KEN/6/2013	KEN13-06	663	663	0	100.00	0.00	I (NWZ)	unnamed
5	SAT1/KEN/8/2013	KEN13-08	663	663	0	100.00	0.00	I (NWZ)	unnamed
6	SAT1/KEN/9/2013	KEN13-09	663	663	0	100.00	0.00	I (NWZ)	unnamed
7	SAT1/TAN/19/99	TAN99-19	663	613	0	92.46	7.54	I (NWZ)	unnamed
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7	SAT1/BOT/1/68 (AY593845)	BOT68-C1	663	489	0	73.76	26.24	III (WZ)	unnamed
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Page 1 of 1

Serotype: SAT1 WRLFMD Ref No: KEN/8/2013 Batch No: WRLFMD/2013/00019 Sender Ref: K12/13 Location: Ngata, Nakuru District, Rift Valley Province, Kenya Date collected: 22/01/2013 Date received by WRLFMD: 25/09/2013 Date received for sequencing: 01/10/2013 Species: Bovine Material used: BTy1 28/09/2013 Region sequenced: VP1 RT-PCR primers: SAT1-1C559F/SAT-2B208R SAT1U-OS/SAT-2B208R	Report date: 13/10/2013 Reported by: N.J. Knowles Checked by: K. Bachanek-Bankowska Topotype: I (NWZ) Genotype/strain: unnamed Sequence filename: KEN13-08.SEQ Date sequence last updated: 13/10/2013 No. of Nt determined: 663 No. of ambiguities: 0 Gene length: 663 Total no. of comparisons: 440 Min. no. of nt for comparison: 600 Total turn-around time: 18 days Sequencing time: 12 days
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Page 1 of 1

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6	SAT1/BOT/1/77 (KF219686)	BOT77-01	663	497	0	74.96	25.04	III (WZ)	unnamed
7	SAT1/BOT/1/68 (AY593845)	BOT68-C1	663	489	0	73.76	26.24	III (WZ)	unnamed
8	SAT1/BEC/1/48 (AY593838)	BEC48-01	663	479	0	72.25	27.75	III (WZ)	unnamed
9	SAT1/SUD/3/76 (DQ009725)	SUD76M03	657	469	0	71.39	28.61	VI	unnamed
10	SAT1/UGA/1/97 (AY442012)	UGA97S01	663	472	0	71.19	28.81	VIII (EA-3)	unnamed

nt, nucleotides

*, not a WRLFMD reference number

Assembled with Report Generator v4.1

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FAO World Reference Laboratory for FMD Genotyping Report

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

Page 1 of 1

Serotype: SAT1 WRLFMD Ref No: KEN/10/2013 Batch No: WRLFMD/2013/00019 Sender Ref: K18/13 Location: Ngata, Nakuru District, Rift Valley Province, Kenya Date collected: 30/01/2013 Date received by WRLFMD: 25/09/2013 Date received for sequencing: 01/10/2013 Species: Bovine Material used: BTy2 01/10/2013 Region sequenced: VP1 RT-PCR primers: SAT1-1C559F/SAT-2B208R SAT1U-OS/SAT-2B208R	Report date: 13/10/2013 Reported by: N.J. Knowles Checked by: K. Bachanek-Bankowska Topotype: I (NWZ) Genotype/strain: unnamed Sequence filename: KEN13-10.SEQ Date sequence last updated: 13/10/2013 No. of Nt determined: 663 No. of ambiguities: 0 Gene length: 663 Total no. of comparisons: 440 Min. no. of nt for comparison: 600 Total turn-around time: 18 days Sequencing time: 12 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/KEN/4/2013	KEN13-04	663	663	0	100.00	0.00	I (NWZ)	unnamed
2	SAT1/KEN/5/2013	KEN13-05	663	663	0	100.00	0.00	I (NWZ)	unnamed
3	SAT1/KEN/6/2013	KEN13-06	663	663	0	100.00	0.00	I (NWZ)	unnamed
4	SAT1/KEN/7/2013	KEN13-07	663	663	0	100.00	0.00	I (NWZ)	unnamed
5	SAT1/KEN/8/2013	KEN13-08	663	663	0	100.00	0.00	I (NWZ)	unnamed
6	SAT1/KEN/9/2013	KEN13-09	663	663	0	100.00	0.00	I (NWZ)	unnamed
7	SAT1/TAN/19/99	TAN99-19	663	613	0	92.46	7.54	I (NWZ)	unnamed
8	SAT1/TAN/21/99	TAN99-21	663	613	0	92.46	7.54	I (NWZ)	unnamed
9	SAT1/TAN/25/99	TAN99-25	663	613	0	92.46	7.54	I (NWZ)	unnamed
10	SAT1/TAN/60/99	TAN99-60	663	613	0	92.46	7.54	I (NWZ)	unnamed

Most Closely Related Reference Viruses

(see http://www.wrlfmd.org/find_genotyping/prototypes.htm)

Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	SAT1/T155/71	TAN71155	663	583	0	87.93	12.07	I (NWZ)	unnamed
2	SAT1/ZIM/23/2003 (KF219690)	ZIM03-23	663	530	0	79.94	20.06	I (NWZ)	unnamed
3	SAT1/RV/11/37 (AY593839)	RHO37-11	663	513	0	77.38	22.62	II (SEZ)	unnamed
4	SAT1/RHO/5/66 (AY593846)	RHO66-05	663	507	0	76.47	23.53	II (SEZ)	unnamed
5	SAT1/UGA BUFF/21/70 (KF219682)	UGA70-21	663	499	0	75.26	24.74	IV (EA-1)	unnamed
6	SAT1/BOT/1/77 (KF219686)	BOT77-01	663	497	0	74.96	25.04	III (WZ)	unnamed
7	SAT1/BOT/1/68 (AY593845)	BOT68-C1	663	489	0	73.76	26.24	III (WZ)	unnamed
8	SAT1/BEC/1/48 (AY593838)	BEC48-01	663	479	0	72.25	27.75	III (WZ)	unnamed
9	SAT1/SUD/3/76 (DQ009725)	SUD76M03	657	469	0	71.39	28.61	VI	unnamed
10	SAT1/UGA/1/97 (AY442012)	UGA97S01	663	472	0	71.19	28.81	VIII (EA-3)	unnamed

nt, nucleotides

*, not a WRLFMD reference number

Assembled with Report Generator v4.1

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Report on FMDV SAT 1 in Kenya in 2013

Batch: WRLFMD/2013/00019

◆ indicates viruses in this batch

Software: MEGA 5.2

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

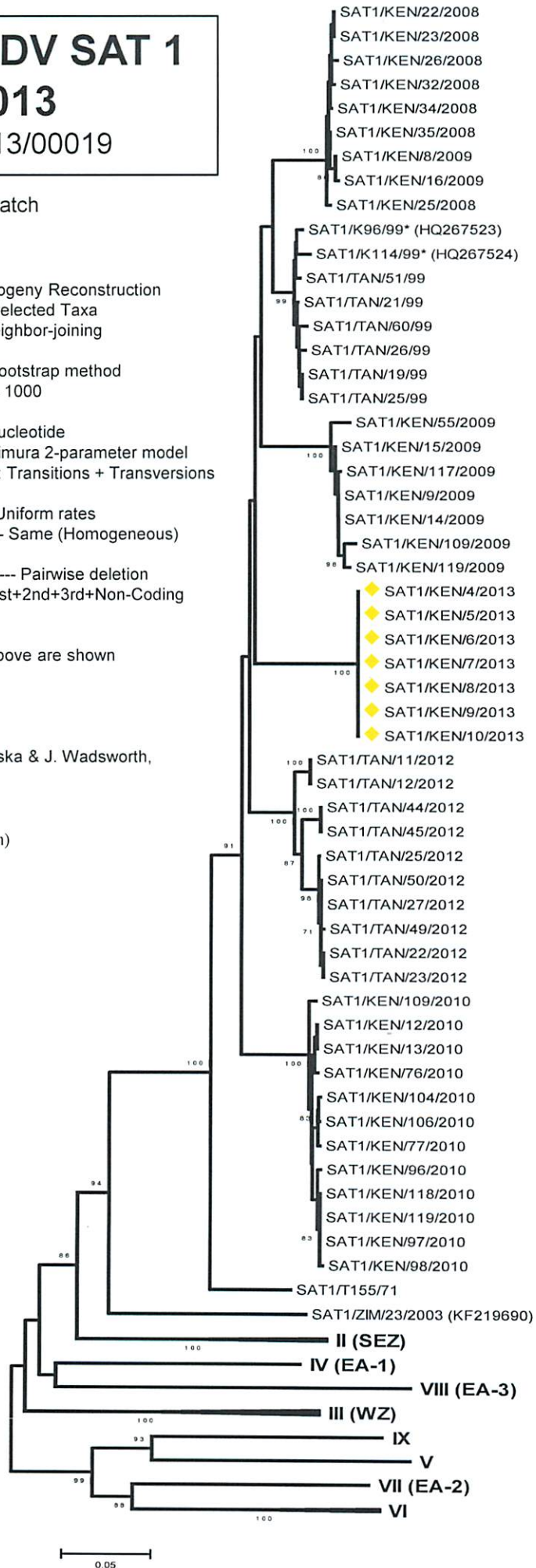
Only bootstrap values of 70% and above are shown

*, not a WRLFMD Ref. No.

N.J. Knowles, K. Bachanek-Bankowska & J. Wadsworth,
13 October 2013

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I (NWZ)

0.05