

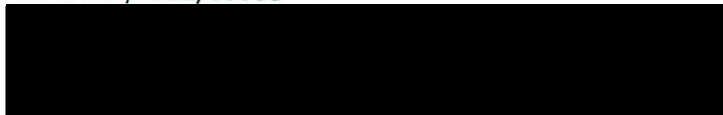


INSTITUTE FOR ANIMAL HEALTH
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FMD Sequencing Report

Lab Reference WRL Batch Number: WRLFMD/2011/00008

Sender Details:



Date Received: 9th February 2011

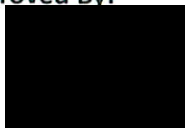
Country of Origin: Kenya

Date Reported: 21st March 2011

Dear Dr. Abraham K. Sangula,

Sequencing work has now been completed in respect of the samples you submitted and the details are as attached. Please note that all of our phylogenetic trees can be accessed via the internet at: <http://www.wrlfmd.org/>

Results Approved By:



Official Stamp:



Date:

21/3/2011



To help us improve the quality of our service, please send any suggestions or requests to the Reference Laboratory by fax (+44 (0) 1483 232621 or email: elizabeth.wilson@bbsrc.ac.uk)

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

Genotyping Report

Report Date for this Batch: 18 March 2011

FMDV type SAT 1

Country: Kenya

Period: 2010

No. of samples: 4

BATCH: WRLFMD/2011/00008



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FAO World Reference Laboratory for FMD Genotyping Report

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Serotype: SAT1	Report date: 18/03/2011
WRLFMD Ref No: KEN/136/2010	Reported by: N.J. Knowles
Batch No: WRLFMD/2011/00008	Checked by: D.P. King
Sender Ref: K143/10 28.6.10	
Location: Keiyo North, Kenya	Topotype: I (NWZ)
Date collected: 28/06/2010	Genotype/strain: Unnamed
Date received by WRLFMD: 09/02/2011	Sequence filename: KEN10136.SEQ
Date received for sequencing: 16/03/2011	Date sequence last updated: 18/03/2011
Species: Cattle	No. of Nt determined: 663
Material used: BTy1	No. of ambiguities: 0
Region sequenced: VP1	Gene length: 663
RT-PCR primers: SAT1-1C559F/SAT-2B208R	Total no. of comparisons: 381
SAT1U-OS/SAT-2B208R	Min. no. of nt for comparison: 600
	Total turn-around time: 37 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	SAT1/KEN/138/2010	KEN10138	663	663	0	100.00	0.00	I (NWZ)	Unnamed
2	SAT1/KEN/118/2010	KEN10118	663	662	0	99.85	0.15	I (NWZ)	unnamed
3	SAT1/KEN/119/2010	KEN10119	663	662	0	99.85	0.15	I (NWZ)	unnamed
4	SAT1/KEN/97/2010	KEN10-97	663	662	0	99.85	0.15	I (NWZ)	unnamed
5	SAT1/KEN/98/2010	KEN10-98	663	661	0	99.70	0.30	I (NWZ)	unnamed
6	SAT1/KEN/120/2010	KEN10120	663	660	0	99.55	0.45	I (NWZ)	unnamed
7	SAT1/KEN/139/2010	KEN10139	663	660	0	99.55	0.45	I (NWZ)	Unnamed
8	SAT1/KEN/96/2010	KEN10-96	663	660	0	99.55	0.45	I (NWZ)	unnamed
9	SAT1/KEN/1/2010	KEN10-01	663	658	0	99.25	0.75	I (NWZ)	Unnamed
10	SAT1/KEN/101/2010	KEN10101	663	658	0	99.25	0.75	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	599	0	90.35	9.65	I (NWZ)	unnamed
2	SAT1/ZIM/23/2003	ZIM03-23	663	532	0	80.24	19.76	I (NWZ)	unnamed
3	SAT1/RV/11/37 (AY593839)	RHO37-11	663	515	0	77.68	22.32	II (SEZ)	unnamed
4	SAT1/RHO/5/66 (AY593846)	RHO66-05	663	513	0	77.38	22.62	II (SEZ)	unnamed
5	SAT1/UGA BUFF/21/70 buffalo	UGA70-21	663	500	0	75.41	24.59	IV (EA-1)	unnamed
6	SAT1/BOT/1/68 (AY593845)	BOT68-C1	663	491	0	74.06	25.94	III (WZ)	unnamed
7	SAT1/BEC/1/48 (AY593838)	BEC48-01	663	487	0	73.45	26.55	III (WZ)	unnamed
8	SAT1/UGA/13/74 (AY442010)	UGA74S13	663	472	0	71.19	28.81	VII (EA-2)	unnamed
9	SAT1/UGA/1/97 (AY442012)	UGA97S01	663	470	0	70.89	29.11	VIII (EA-3)	unnamed
10	SAT1/SUD/3/76 (DQ009725)	SUD76M03	657	463	0	70.47	29.53	VI	unnamed

nt, nucleotides

*, not a WRLFMD reference number

Assembled with Report Generator v4.0

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FAO World Reference Laboratory for FMD Genotyping Report

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Serotype: SAT1	Report date: 18/03/2011
WRLFMD Ref No: KEN/138/2010	Reported by: N.J. Knowles
Batch No: WRLFMD/2011/00008	Checked by: D.P. King
Sender Ref: K173/10 13.8.10	
Location: Nanasha, Kenya	Topotype: I (NWZ)
Date collected: 13/08/2010	Genotype/strain: Unnamed
Date received by WRLFMD: 09/02/2011	Sequence filename: KEN10138.SEQ
Date received for sequencing: 16/03/2011	Date sequence last updated: 18/03/2011
Species: Cattle	No. of Nt determined: 663
Material used: BTy2	No. of ambiguities: 0
Region sequenced: VP1	Gene length: 663
RT-PCR primers: SAT1-1C559F/SAT-2B208R	Total no. of comparisons: 381
SAT1U-OS/SAT-2B208R	Min. no. of nt for comparison: 600
	Total turn-around time: 37 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	SAT1/KEN/136/2010	KEN10136	663	663	0	100.00	0.00	I (NWZ)	Unnamed
2	SAT1/KEN/118/2010	KEN10118	663	662	0	99.85	0.15	I (NWZ)	unnamed
3	SAT1/KEN/119/2010	KEN10119	663	662	0	99.85	0.15	I (NWZ)	unnamed
4	SAT1/KEN/97/2010	KEN10-97	663	662	0	99.85	0.15	I (NWZ)	unnamed
5	SAT1/KEN/98/2010	KEN10-98	663	661	0	99.70	0.30	I (NWZ)	unnamed
6	SAT1/KEN/120/2010	KEN10120	663	660	0	99.55	0.45	I (NWZ)	unnamed
7	SAT1/KEN/139/2010	KEN10139	663	660	0	99.55	0.45	I (NWZ)	Unnamed
8	SAT1/KEN/96/2010	KEN10-96	663	660	0	99.55	0.45	I (NWZ)	unnamed
9	SAT1/KEN/1/2010	KEN10-01	663	658	0	99.25	0.75	I (NWZ)	Unnamed
10	SAT1/KEN/101/2010	KEN10101	663	658	0	99.25	0.75	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	599	0	90.35	9.65	I (NWZ)	unnamed
2	SAT1/ZIM/23/2003	ZIM03-23	663	532	0	80.24	19.76	I (NWZ)	unnamed
3	SAT1/RV/11/37 (AY593839)	RHO37-11	663	515	0	77.68	22.32	II (SEZ)	unnamed
4	SAT1/RHO/5/66 (AY593846)	RHO66-05	663	513	0	77.38	22.62	II (SEZ)	unnamed
5	SAT1/UGA BUFF/21/70 buffalo	UGA70-21	663	500	0	75.41	24.59	IV (EA-1)	unnamed
6	SAT1/BOT/1/68 (AY593845)	BOT68-C1	663	491	0	74.06	25.94	III (WZ)	unnamed
7	SAT1/BEC/1/48 (AY593838)	BEC48-01	663	487	0	73.45	26.55	III (WZ)	unnamed
8	SAT1/UGA/13/74 (AY442010)	UGA74S13	663	472	0	71.19	28.81	VII (EA-2)	unnamed
9	SAT1/UGA/1/97 (AY442012)	UGA97S01	663	470	0	70.89	29.11	VIII (EA-3)	unnamed
10	SAT1/SUD/3/76 (DQ009725)	SUD76M03	657	463	0	70.47	29.53	VI	unnamed

nt, nucleotides

*, not a WRLFMD reference number

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FAO World Reference Laboratory for FMD Genotyping Report

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Serotype: SAT1	Report date: 18/03/2011
WRLFMD Ref No: KEN/139/2010	Reported by: N.J. Knowles
Batch No: WRLFMD/2011/00008	Checked by: D.P. King
Sender Ref: K180/10 25.8.10	
Location: Koibatek, Kenya	Topotype: I (NWZ)
Date collected: 25/08/2010	Genotype/strain: Unnamed
Date received by WRLFMD: 09/02/2011	Sequence filename: KEN10139.SEQ
Date received for sequencing: 16/03/2011	Date sequence last updated: 18/03/2011
Species: Cattle	No. of Nt determined: 663
Material used: BTy1	No. of ambiguities: 0
Region sequenced: VP1	Gene length: 663
RT-PCR primers: SAT1-1C559F/SAT-2B208R	Total no. of comparisons: 381
SAT1U-OS/SAT-2B208R	Min. no. of nt for comparison: 600
	Total turn-around time: 37 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	SAT1/KEN/136/2010	KEN10136	663	660	0	99.55	0.45	I (NWZ)	Unnamed
2	SAT1/KEN/138/2010	KEN10138	663	660	0	99.55	0.45	I (NWZ)	Unnamed
3	SAT1/KEN/118/2010	KEN10118	663	659	0	99.40	0.60	I (NWZ)	unnamed
4	SAT1/KEN/119/2010	KEN10119	663	659	0	99.40	0.60	I (NWZ)	unnamed
5	SAT1/KEN/97/2010	KEN10-97	663	659	0	99.40	0.60	I (NWZ)	unnamed
6	SAT1/KEN/98/2010	KEN10-98	663	658	0	99.25	0.75	I (NWZ)	unnamed
7	SAT1/KEN/120/2010	KEN10120	663	657	0	99.10	0.90	I (NWZ)	unnamed
8	SAT1/KEN/96/2010	KEN10-96	663	657	0	99.10	0.90	I (NWZ)	unnamed
9	SAT1/KEN/1/2010	KEN10-01	663	655	0	98.79	1.21	I (NWZ)	Unnamed
10	SAT1/KEN/101/2010	KEN10101	663	655	0	98.79	1.21	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	598	0	90.20	9.80	I (NWZ)	unnamed
2	SAT1/ZIM/23/2003	ZIM03-23	663	529	0	79.79	20.21	I (NWZ)	unnamed
3	SAT1/RHO/5/66 (AY593846)	RHO66-05	663	514	0	77.53	22.47	II (SEZ)	unnamed
4	SAT1/RV/11/37 (AY593839)	RHO37-11	663	512	0	77.22	22.78	II (SEZ)	unnamed
5	SAT1/UGA BUFF/21/70 buffalo	UGA70-21	663	501	0	75.57	24.43	IV (EA-1)	unnamed
6	SAT1/BOT/1/68 (AY593845)	BOT68-C1	663	492	0	74.21	25.79	III (WZ)	unnamed
7	SAT1/BEC/1/48 (AY593838)	BEC48-01	663	486	0	73.30	26.70	III (WZ)	unnamed
8	SAT1/UGA/13/74 (AY442010)	UGA74S13	663	473	0	71.34	28.66	VII (EA-2)	unnamed
9	SAT1/UGA/1/97 (AY442012)	UGA97S01	663	470	0	70.89	29.11	VIII (EA-3)	unnamed
10	SAT1/SUD/3/76 (DQ009725)	SUD76M03	657	465	0	70.78	29.22	VI	unnamed

nt, nucleotides

*, not a WRLFMD reference number

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FAO World Reference Laboratory for FMD Genotyping Report

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Serotype: SAT1	Report date: 18/03/2011
WRLFMD Ref No: KEN/140/2010	Reported by: N.J. Knowles
Batch No: WRLFMD/2011/00008	Checked by: D.P. King
Sender Ref: K184/10 3.9.10	
Location: Athi River (Mavoko), Kenya	Topotype: I (NWZ)
Date collected: 03/09/2010	Genotype/strain: Unnamed
Date received by WRLFMD: 09/02/2011	Sequence filename: KEN10140.SEQ
Date received for sequencing: 16/03/2011	Date sequence last updated: 18/03/2011
Species: Cattle	No. of Nt determined: 663
Material used: BTy1	No. of ambiguities: 0
Region sequenced: VP1	Gene length: 663
RT-PCR primers: SAT1-1C559F/SAT-2B208R	Total no. of comparisons: 381
SAT1U-OS/SAT-2B208R	Min. no. of nt for comparison: 600
	Total turn-around time: 37 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	SAT1/KEN/111/2010	KEN10111	663	662	0	99.85	0.15	I (NWZ)	unnamed
2	SAT1/KEN/1/2010	KEN10-01	663	661	0	99.70	0.30	I (NWZ)	Unnamed
3	SAT1/KEN/116/2010	KEN10116	663	661	0	99.70	0.30	I (NWZ)	unnamed
4	SAT1/KEN/4/2010	KEN10-04	663	661	0	99.70	0.30	I (NWZ)	Unnamed
5	SAT1/KEN/5/2010	KEN10-05	663	661	0	99.70	0.30	I (NWZ)	Unnamed
6	SAT1/KEN/6/2010	KEN10-06	663	661	0	99.70	0.30	I (NWZ)	Unnamed
7	SAT1/KEN/8/2010	KEN10-08	663	661	0	99.70	0.30	I (NWZ)	Unnamed
8	SAT1/KEN/88/2010	KEN10-88	663	661	0	99.70	0.30	I (NWZ)	unnamed
9	SAT1/KEN/10/2010	KEN10-10	663	660	0	99.55	0.45	I (NWZ)	Unnamed
10	SAT1/KEN/94/2010	KEN10-94	663	660	0	99.55	0.45	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	598	0	90.20	9.80	I (NWZ)	unnamed
2	SAT1/ZIM/23/2003	ZIM03-23	663	530	0	79.94	20.06	I (NWZ)	unnamed
3	SAT1/RV/11/37 (AY593839)	RHO37-11	663	512	0	77.22	22.78	II (SEZ)	unnamed
4	SAT1/RHO/5/66 (AY593846)	RHO66-05	663	510	0	76.92	23.08	II (SEZ)	unnamed
5	SAT1/UGA BUFF/21/70 buffalo	UGA70-21	663	499	0	75.26	24.74	IV (EA-1)	unnamed
6	SAT1/BOT/1/68 (AY593845)	BOT68-C1	663	490	0	73.91	26.09	III (WZ)	unnamed
7	SAT1/BEC/1/48 (AY593838)	BEC48-01	663	484	0	73.00	27.00	III (WZ)	unnamed
8	SAT1/UGA/1/97 (AY442012)	UGA97S01	663	470	0	70.89	29.11	VIII (EA-3)	unnamed
9	SAT1/UGA/13/74 (AY442010)	UGA74S13	663	470	0	70.89	29.11	VII (EA-2)	unnamed
10	SAT1/SUD/3/76 (DQ009725)	SUD76M03	657	463	0	70.47	29.53	VI	unnamed

nt, nucleotides

*, not a WRLFMD reference number

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Report on FMDV SAT 1 in Kenya in 2010

Batch: WRLFMD/2011/00008

◆ indicates viruses in this batch

Software: MEGA 5.0

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

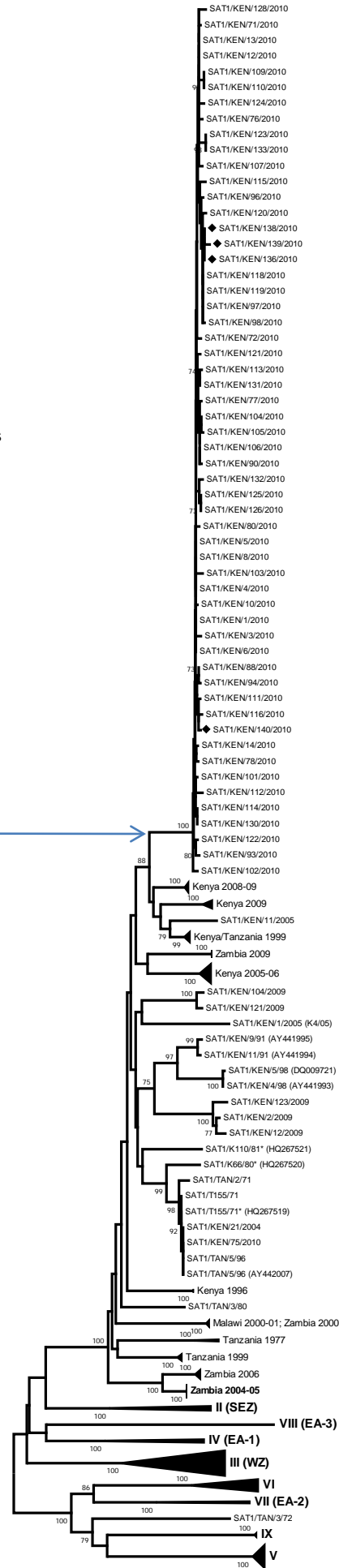
Only bootstrap values of 70% and above are shown

*, not a WRLFMD Ref. No.

N.J. Knowles & J. Wadsworth, 18 March 2011

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Expanded on
next page



I (NWZ)

Report on FMDV SAT 1 in Kenya in 2010

Batch: WRLFMD/2011/00008

◆ indicates viruses in this batch



0.001