WRLFMD

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FMD Sequencing Report

Lab Reference WRL Batch Number: WRLFMD/2009/00022
Sender Details: [redacted]

Date Received: 30th April 2009
Country of Origin: Kenya
Date Reported: 17th August 2009

Dear Dr. Eunice,

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 Approv[redacted]

Official Stamp: [redacted]

Date: 17/08/09

[redacted]

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.byrom@bbsrc.ac.uk)

Molecular Epidemiology Report Form

Serotype: SAT1
WRL Ref No: KEN/22/2008
Sender Ref: K61/08
Date collected: 01/06/2008
Date received by WRLFMD: 30/04/2009
Date received for sequencing: 01/06/2009
Species: CATTLE
Material used: BTy1
Region sequenced: VP1
RT-PCR primers: SAT1-1C559F/SAT-2B208R;
SAT1U-OS/SAT-2B208R
No. of Nt determined: 663
No. of ambiguities: 0
Gene length: 663

Report date: 14/08/2009
Reported by: N.J. Knowles
Checked by: D.P. King

Topotype: II (NWZ)
Genotype/strain: none designated
Sequence filename: KEN08-22.SEQ
Date sequence last updated: 07/08/2008
Total no. of comparisons: 335
Min. no. of nt for comparison: 300
Total turn-around time: 106 days
Sequencing time: 74 days

Comments: FMDV type O was also identified in this sample.

Ten Most Closely Related Viruses

Pos.	Virus name	Filename	No. nt compared	No. nt matched	No. of ambiguities	% Identity	% Difference
1	SAT1/KEN/23/2008	KEN08-23	663	663	0	100	0
2	SAT1/KEN/32/2008	KEN08-32	663	661	0	99.7	0.3
3	SAT1/KEN/34/2008	KEN08-34	663	661	0	99.7	0.3
4	SAT1/KEN/35/2008	KEN08-35	663	661	0	99.7	0.3
5	SAT1/KEN/25/2008	KEN08-25	663	660	0	99.55	0.45
6	SAT1/KEN/26/2008	KEN08-26	663	660	0	99.55	0.45
7	SAT1/KEN/8/2009	KEN09-08	663	659	0	99.4	0.6
8	SAT1/KEN/16/2009	KEN09-16	663	658	0	99.25	0.75
9	SAT1/TAN/51/99 (AY442004)	TAN99S51	663	630	0	95.02	4.98
10	SAT1/TAN/25/99	TAN99-25	315	299	16	94.92	5.08

Relationships to Reference Virus Strains

Pos.	Virus name	Filename	No. nt compared	No. nt matched	No. of ambiguities	% Identity	% Difference
1	SAT1/T155/71	TAN71155	663	599	0	90.35	9.65
2	SAT1/SAR/9/81	SAR81-09	629	490	11	77.9	22.1
3	SAT1/RV/11/37 (AY593839)	RHO37-11	663	513	0	77.38	22.62
4	SAT1/RHO/5/66 (AY593846)	RHO66-05	663	510	0	76.92	23.08
5	SAT1/SA/13/61 (AY593842)	SAR61-13	663	498	0	75.11	24.89
6	SAT1/BOT/1/68 (Z98203)	BOT68-B1	663	497	0	74.96	25.04
7	SAT1/SWA/40/61	SWA61-40	663	496	0	74.81	25.19
8	SAT1/BEC/1/48 (AY593838)	BEC48-01	663	488	0	73.6	26.4
9	SAT1/SR/2/58	ZIM58-02	663	487	0	73.45	26.55
10	SAT1/ISR/4/62 (AY593844)	ISR62-04	663	467	0	70.44	29.56

nt, nucleotides
*, not a WRLFMD reference number

Molecular Epidemiology Report Form

Serotype: SAT1
WRL Ref No: KEN/23/2008
Sender Ref: K62/08
Date collected: 01/07/2008
Date received by WRLFMD: 30/04/2009
Date received for sequencing: 01/06/2009
Species: CATTLE
Material used: BTy1
Region sequenced: VP1
RT-PCR primers: SAT1-1C559F/SAT-2B208R; SAT1U-OS/SAT-2B208R
No. of Nt determined: 663
No. of ambiguities: 0
Gene length: 663

Report date: 14/08/2009
Reported by: N.J. Knowles
Checked by: D.P. King

Topotype: II (NWZ)
Genotype/strain: none designated
Sequence filename: KEN08-23.SEQ
Date sequence last updated: 07/08/2009
Total no. of comparisons: 335
Min. no. of nt for comparison: 300
Total turn-around time: 106 days
Sequencing time: 74 days

Comments:

Ten Most Closely Related Viruses

Pos.	Virus name	Filename	No. nt compared	No. nt matched	No. of ambiguities	% Identity	% Difference
1	SAT1/KEN/22/2008	KEN08-22	663	663	0	100	0
2	SAT1/KEN/32/2008	KEN08-32	663	661	0	99.7	0.3
3	SAT1/KEN/34/2008	KEN08-34	663	661	0	99.7	0.3
4	SAT1/KEN/35/2008	KEN08-35	663	661	0	99.7	0.3
5	SAT1/KEN/25/2008	KEN08-25	663	660	0	99.55	0.45
6	SAT1/KEN/26/2008	KEN08-26	663	660	0	99.55	0.45
7	SAT1/KEN/8/2009	KEN09-08	663	659	0	99.4	0.6
8	SAT1/KEN/16/2009	KEN09-16	663	658	0	99.25	0.75
9	SAT1/TAN/51/99 (AY442004)	TAN99S51	663	630	0	95.02	4.98
10	SAT1/TAN/25/99	TAN99-25	315	299	16	94.92	5.08

Relationships to Reference Virus Strains

Pos.	Virus name	Filename	No. nt compared	No. nt matched	No. of ambiguities	% Identity	% Difference
1	SAT1/T155/71	TAN71155	663	599	0	90.35	9.65
2	SAT1/SAR/9/81	SAR81-09	629	490	11	77.9	22.1
3	SAT1/RV/11/37 (AY593839)	RHO37-11	663	513	0	77.38	22.62
4	SAT1/RHO/5/66 (AY593846)	RHO66-05	663	510	0	76.92	23.08
5	SAT1/SA/13/61 (AY593842)	SAR61-13	663	498	0	75.11	24.89
6	SAT1/BOT/1/68 (Z98203)	BOT68-B1	663	497	0	74.96	25.04
7	SAT1/SWA/40/61	SWA61-40	663	496	0	74.81	25.19
8	SAT1/BEC/1/48 (AY593838)	BEC48-01	663	488	0	73.6	26.4
9	SAT1/SR/2/58	ZIM58-02	663	487	0	73.45	26.55
10	SAT1/ISR/4/62 (AY593844)	ISR62-04	663	467	0	70.44	29.56

nt, nucleotides
*, not a WRLFMD reference number

Molecular Epidemiology Report Form

Serotype: SAT1
WRL Ref No: KEN/25/2008
Sender Ref: K67/08
Date collected: 01/08/2008
Date received by WRLFMD: 30/04/2009
Date received for sequencing: 01/06/2009
Species: CATTLE
Material used: BTy1
Region sequenced: VP1
RT-PCR primers: SAT1-1C559F/SAT-2B208R; SAT1U-OS/SAT-2B208R
No. of Nt determined: 663
No. of ambiguities: 0
Gene length: 663

Report date: 14/08/2009
Reported by: N.J. Knowles
Checked by: D.P. King

Topotype: II (NWZ)
Genotype/strain: none designated
Sequence filename: KEN08-25.SEQ
Date sequence last updated: 07/08/2009
Total no. of comparisons: 335
Min. no. of nt for comparison: 300
Total turn-around time: 106 days
Sequencing time: 74 days

Comments:

Ten Most Closely Related Viruses

Pos.	Virus name	Filename	No. nt compared	No. nt matched	No. of ambiguities	% Identity	% Difference
1	SAT1/KEN/22/2008	KEN08-22	663	660	0	99.55	0.45
2	SAT1/KEN/23/2008	KEN08-23	663	660	0	99.55	0.45
3	SAT1/KEN/32/2008	KEN08-32	663	660	0	99.55	0.45
4	SAT1/KEN/34/2008	KEN08-34	663	660	0	99.55	0.45
5	SAT1/KEN/35/2008	KEN08-35	663	660	0	99.55	0.45
6	SAT1/KEN/26/2008	KEN08-26	663	659	0	99.4	0.6
7	SAT1/KEN/8/2009	KEN09-08	663	658	0	99.25	0.75
8	SAT1/KEN/16/2009	KEN09-16	663	657	0	99.1	0.9
9	SAT1/TAN/25/99	TAN99-25	315	300	16	95.24	4.76
10	SAT1/TAN/51/99 (AY442004)	TAN99S51	663	631	0	95.17	4.83

Relationships to Reference Virus Strains

Pos.	Virus name	Filename	No. nt compared	No. nt matched	No. of ambiguities	% Identity	% Difference
1	SAT1/T155/71	TAN71155	663	600	0	90.5	9.5
2	SAT1/SAR/9/81	SAR81-09	629	488	11	77.58	22.42
3	SAT1/RV/11/37 (AY593839)	RHO37-11	663	513	0	77.38	22.62
4	SAT1/RHO/5/66 (AY593846)	RHO66-05	663	510	0	76.92	23.08
5	SAT1/SA/13/61 (AY593842)	SAR61-13	663	497	0	74.96	25.04
6	SAT1/BOT/1/68 (Z98203)	BOT68-B1	663	496	0	74.81	25.19
7	SAT1/SWA/40/61	SWA61-40	663	495	0	74.66	25.34
8	SAT1/BEC/1/48 (AY593838)	BEC48-01	663	487	0	73.45	26.55
9	SAT1/SR/2/58	ZIM58-02	663	486	0	73.3	26.7
10	SAT1/ISR/4/62 (AY593844)	ISR62-04	663	467	0	70.44	29.56

nt, nucleotides
*, not a WRLFMD reference number

Molecular Epidemiology Report Form

Serotype: SAT1
WRL Ref No: KEN/26/2008
Sender Ref: K68/08
Date collected: 01/08/2008
Date received by WRLFMD: 30/04/2009
Date received for sequencing: 01/06/2009
Species: CATTLE
Material used: BTy1
Region sequenced: VP1
RT-PCR primers: SAT1-1C559F/SAT-2B208R;
SAT1U-OS/SAT-2B208R
No. of Nt determined: 663
No. of ambiguities: 0
Gene length: 663

Report date: 14/08/2009
Reported by: N.J. Knowles
Checked by: D.P. King

Topotype: II (NWZ)
Genotype/strain: none designated
Sequence filename: KEN08-26.SEQ
Date sequence last updated: 07/08/2009
Total no. of comparisons: 335
Min. no. of nt for comparison: 300
Total turn-around time: 106 days
Sequencing time: 74 days

Comments:

Ten Most Closely Related Viruses

Pos.	Virus name	Filename	No. nt compared	No. nt matched	No. of ambiguities	% Identity	% Difference
1	SAT1/KEN/22/2008	KEN08-22	663	660	0	99.55	0.45
2	SAT1/KEN/23/2008	KEN08-23	663	660	0	99.55	0.45
3	SAT1/KEN/32/2008	KEN08-32	663	660	0	99.55	0.45
4	SAT1/KEN/34/2008	KEN08-34	663	660	0	99.55	0.45
5	SAT1/KEN/35/2008	KEN08-35	663	660	0	99.55	0.45
6	SAT1/KEN/25/2008	KEN08-25	663	659	0	99.4	0.6
7	SAT1/KEN/8/2009	KEN09-08	663	658	0	99.25	0.75
8	SAT1/KEN/16/2009	KEN09-16	663	657	0	99.1	0.9
9	SAT1/TAN/25/99	TAN99-25	315	299	16	94.92	5.08
10	SAT1/TAN/51/99 (AY442004)	TAN99S51	663	629	0	94.87	5.13

Relationships to Reference Virus Strains

Pos.	Virus name	Filename	No. nt compared	No. nt matched	No. of ambiguities	% Identity	% Difference
1	SAT1/T155/71	TAN71155	663	598	0	90.2	9.8
2	SAT1/SAR/9/81	SAR81-09	629	490	11	77.9	22.1
3	SAT1/RV/11/37 (AY593839)	RHO37-11	663	511	0	77.07	22.93
4	SAT1/RHO/5/66 (AY593846)	RHO66-05	663	508	0	76.62	23.38
5	SAT1/SA/13/61 (AY593842)	SAR61-13	663	496	0	74.81	25.19
6	SAT1/BOT/1/68 (Z98203)	BOT68-B1	663	495	0	74.66	25.34
7	SAT1/SWA/40/61	SWA61-40	663	494	0	74.51	25.49
8	SAT1/BEC/1/48 (AY593838)	BEC48-01	663	486	0	73.3	26.7
9	SAT1/SR/2/58	ZIM58-02	663	485	0	73.15	26.85
10	SAT1/ISR/4/62 (AY593844)	ISR62-04	663	465	0	70.14	29.86

nt, nucleotides
*, not a WRLFMD reference number

Molecular Epidemiology Report Form

Serotype: SAT1
WRL Ref No: KEN/32/2008
Sender Ref: K91/08
Date collected: 01/10/2008
Date received by WRLFMD: 30/04/2009
Date received for sequencing: 01/06/2009
Species: CATTLE
Material used: BTy1
Region sequenced: VP1
RT-PCR primers: SAT1-1C559F/SAT-2B208R;
SAT1U-OS/SAT-2B208R
No. of Nt determined: 663
No. of ambiguities: 0
Gene length: 663

Report date: 14/08/2009
Reported by: N.J. Knowles
Checked by: D.P. King

Topotype: II (NWZ)
Genotype/strain: none designated
Sequence filename: KEN08-32.SEQ
Date sequence last updated: 07/08/2009
Total no. of comparisons: 335
Min. no. of nt for comparison: 300
Total turn-around time: 106 days
Sequencing time: 74 days

Comments:

Ten Most Closely Related Viruses

Pos.	Virus name	Filename	No. nt compared	No. nt matched	No. of ambiguities	% Identity	% Difference
1	SAT1/KEN/22/2008	KEN08-22	663	661	0	99.7	0.3
2	SAT1/KEN/23/2008	KEN08-23	663	661	0	99.7	0.3
3	SAT1/KEN/34/2008	KEN08-34	663	661	0	99.7	0.3
4	SAT1/KEN/35/2008	KEN08-35	663	661	0	99.7	0.3
5	SAT1/KEN/25/2008	KEN08-25	663	660	0	99.55	0.45
6	SAT1/KEN/26/2008	KEN08-26	663	660	0	99.55	0.45
7	SAT1/KEN/8/2009	KEN09-08	663	659	0	99.4	0.6
8	SAT1/KEN/16/2009	KEN09-16	663	658	0	99.25	0.75
9	SAT1/TAN/51/99 (AY442004)	TAN99S51	663	630	0	95.02	4.98
10	SAT1/TAN/25/99	TAN99-25	315	298	16	94.6	5.4

Relationships to Reference Virus Strains

Pos.	Virus name	Filename	No. nt compared	No. nt matched	No. of ambiguities	% Identity	% Difference
1	SAT1/T155/71	TAN71155	663	599	0	90.35	9.65
2	SAT1/SAR/9/81	SAR81-09	629	489	11	77.74	22.26
3	SAT1/RV/11/37 (AY593839)	RHO37-11	663	512	0	77.22	22.78
4	SAT1/RHO/5/66 (AY593846)	RHO66-05	663	509	0	76.77	23.23
5	SAT1/SA/13/61 (AY593842)	SAR61-13	663	497	0	74.96	25.04
6	SAT1/BOT/1/68 (Z98203)	BOT68-B1	663	496	0	74.81	25.19
7	SAT1/SWA/40/61	SWA61-40	663	495	0	74.66	25.34
8	SAT1/BEC/1/48 (AY593838)	BEC48-01	663	488	0	73.6	26.4
9	SAT1/SR/2/58	ZIM58-02	663	486	0	73.3	26.7
10	SAT1/ISR/4/62 (AY593844)	ISR62-04	663	467	0	70.44	29.56

nt, nucleotides
*, not a WRLFMD reference number

Molecular Epidemiology Report Form

Serotype: SAT1
WRL Ref No: KEN/34/2008
Sender Ref: K99/08
Date collected: 01/11/2008
Date received by WRLFMD: 30/04/2009
Date received for sequencing: 01/06/2009
Species: CATTLE
Material used: BTy1
Region sequenced: VP1
RT-PCR primers: SAT1-1C559F/SAT-2B208R;
SAT1U-OS/SAT-2B208R
No. of Nt determined: 663
No. of ambiguities: 0
Gene length: 663

Report date: 14/08/2009
Reported by: N.J. Knowles
Checked by: D.P. King

Topotype: II (NWZ)
Genotype/strain: none designated
Sequence filename: KEN08-34.SEQ
Date sequence last updated: 07/08/2009
Total no. of comparisons: 335
Min. no. of nt for comparison: 300
Total turn-around time: 106 days
Sequencing time: 74 days

Comments:

Ten Most Closely Related Viruses

Pos.	Virus name	Filename	No. nt compared	No. nt matched	No. of ambiguities	% Identity	% Difference
1	SAT1/KEN/22/2008	KEN08-22	663	661	0	99.7	0.3
2	SAT1/KEN/23/2008	KEN08-23	663	661	0	99.7	0.3
3	SAT1/KEN/32/2008	KEN08-32	663	661	0	99.7	0.3
4	SAT1/KEN/35/2008	KEN08-35	663	661	0	99.7	0.3
5	SAT1/KEN/25/2008	KEN08-25	663	660	0	99.55	0.45
6	SAT1/KEN/26/2008	KEN08-26	663	660	0	99.55	0.45
7	SAT1/KEN/8/2009	KEN09-08	663	659	0	99.4	0.6
8	SAT1/KEN/16/2009	KEN09-16	663	658	0	99.25	0.75
9	SAT1/TAN/51/99 (AY442004)	TAN99S51	663	632	0	95.32	4.68
10	SAT1/TAN/25/99	TAN99-25	315	299	16	94.92	5.08

Relationships to Reference Virus Strains

Pos.	Virus name	Filename	No. nt compared	No. nt matched	No. of ambiguities	% Identity	% Difference
1	SAT1/T155/71	TAN71155	663	599	0	90.35	9.65
2	SAT1/SAR/9/81	SAR81-09	629	489	11	77.74	22.26
3	SAT1/RV/11/37 (AY593839)	RHO37-11	663	512	0	77.22	22.78
4	SAT1/RHO/5/66 (AY593846)	RHO66-05	663	509	0	76.77	23.23
5	SAT1/SA/13/61 (AY593842)	SAR61-13	663	497	0	74.96	25.04
6	SAT1/BOT/1/68 (Z98203)	BOT68-B1	663	496	0	74.81	25.19
7	SAT1/SWA/40/61	SWA61-40	663	495	0	74.66	25.34
8	SAT1/BEC/1/48 (AY593838)	BEC48-01	663	487	0	73.45	26.55
9	SAT1/SR/2/58	ZIM58-02	663	486	0	73.3	26.7
10	SAT1/ISR/4/62 (AY593844)	ISR62-04	663	466	0	70.29	29.71

nt, nucleotides
*, not a WRLFMD reference number

Molecular Epidemiology Report Form

Serotype: SAT1
WRL Ref No: KEN/35/2008
Sender Ref: K100/08
Date collected: 01/11/2008
Date received by WRLFMD: 30/04/2009
Date received for sequencing: 01/06/2009
Species: CATTLE
Material used: BTy1
Region sequenced: VP1
RT-PCR primers: SAT1-1C559F/SAT-2B208R; SAT1U-OS/SAT-2B208R
No. of Nt determined: 663
No. of ambiguities: 0
Gene length: 663

Report date: 14/08/2009
Reported by: N.J. Knowles
Checked by: D.P. King

Topotype: II (NWZ)
Genotype/strain: none designated
Sequence filename: KEN08-35.SEQ
Date sequence last updated: 07/08/2009
Total no. of comparisons: 335
Min. no. of nt for comparison: 300
Total turn-around time: 106 days
Sequencing time: 74 days

Comments:

Ten Most Closely Related Viruses

Pos.	Virus name	Filename	No. nt compared	No. nt matched	No. of ambiguities	% Identity	% Difference
1	SAT1/KEN/22/2008	KEN08-22	663	661	0	99.7	0.3
2	SAT1/KEN/23/2008	KEN08-23	663	661	0	99.7	0.3
3	SAT1/KEN/32/2008	KEN08-32	663	661	0	99.7	0.3
4	SAT1/KEN/34/2008	KEN08-34	663	661	0	99.7	0.3
5	SAT1/KEN/8/2009	KEN09-08	663	661	0	99.7	0.3
6	SAT1/KEN/16/2009	KEN09-16	663	660	0	99.55	0.45
7	SAT1/KEN/25/2008	KEN08-25	663	660	0	99.55	0.45
8	SAT1/KEN/26/2008	KEN08-26	663	660	0	99.55	0.45
9	SAT1/TAN/51/99 (AY442004)	TAN99S51	663	632	0	95.32	4.68
10	SAT1/TAN/25/99	TAN99-25	315	300	16	95.24	4.76

Relationships to Reference Virus Strains

Pos.	Virus name	Filename	No. nt compared	No. nt matched	No. of ambiguities	% Identity	% Difference
1	SAT1/T155/71	TAN71155	663	599	0	90.35	9.65
2	SAT1/SAR/9/81	SAR81-09	629	490	11	77.9	22.1
3	SAT1/RV/11/37 (AY593839)	RHO37-11	663	514	0	77.53	22.47
4	SAT1/RHO/5/66 (AY593846)	RHO66-05	663	511	0	77.07	22.93
5	SAT1/BOT/1/68 (Z98203)	BOT68-B1	663	498	0	75.11	24.89
6	SAT1/SA/13/61 (AY593842)	SAR61-13	663	497	0	74.96	25.04
7	SAT1/SWA/40/61	SWA61-40	663	497	0	74.96	25.04
8	SAT1/SR/2/58	ZIM58-02	663	488	0	73.6	26.4
9	SAT1/BEC/1/48 (AY593838)	BEC48-01	663	487	0	73.45	26.55
10	SAT1/ISR/4/62 (AY593844)	ISR62-04	663	466	0	70.29	29.71

nt, nucleotides
*, not a WRLFMD reference number

Molecular Epidemiology Report Form

Serotype: SAT1
WRL Ref No: KEN/2/2009
Sender Ref: K7/09
Date collected: 01/01/2009
Date received by WRLFMD: 30/04/2009
Date received for sequencing: 01/06/2009
Species: CATTLE
Material used: BTy2
Region sequenced: VP1
RT-PCR primers: SAT1-1C559F/SAT-2B208R; SAT1U-OS/SAT-2B208R
No. of Nt determined: 663
No. of ambiguities: 0
Gene length: 663

Report date: 14/08/2009
Reported by: N.J. Knowles
Checked by: D.P. King

Topotype: II (NWZ)
Genotype/strain: none designated
Sequence filename: KEN09-02.SEQ
Date sequence last updated: 07/08/2009
Total no. of comparisons: 335
Min. no. of nt for comparison: 300
Total turn-around time: 106 days
Sequencing time: 74 days

Comments:

Ten Most Closely Related Viruses

Pos.	Virus name	Filename	No. nt compared	No. nt matched	No. of ambiguities	% Identity	% Difference
1	SAT1/KEN/12/2009	KEN09-12	663	656	0	98.94	1.06
2	SAT1/KEN/9/91 (AY441995)	KEN91S09	663	599	0	90.35	9.65
3	SAT1/KEN/11/91 (AY441994)	KEN91S11	663	598	0	90.2	9.8
4	SAT1/KEN/4/98 (AY441993)	KEN98S04	663	596	0	89.89	10.11
5	SAT1/T155/71	TAN71155	663	596	0	89.89	10.11
6	SAT1/KEN/21/2004	KEN04-21	663	595	0	89.74	10.26
7	SAT1/TAN/5/96 (AY442007)	TAN96S05	663	595	0	89.74	10.26
8	SAT1/TAN/25/99	TAN99-25	315	280	16	88.89	11.11
9	SAT1/KEN/25/2008	KEN08-25	663	588	0	88.69	11.31
10	SAT1/KEN/26/2008	KEN08-26	663	588	0	88.69	11.31

Relationships to Reference Virus Strains

Pos.	Virus name	Filename	No. nt compared	No. nt matched	No. of ambiguities	% Identity	% Difference
1	SAT1/T155/71	TAN71155	663	596	0	89.89	10.11
2	SAT1/SAR/9/81	SAR81-09	629	493	11	78.38	21.62
3	SAT1/RV/11/37 (AY593839)	RHO37-11	663	506	0	76.32	23.68
4	SAT1/RHO/5/66 (AY593846)	RHO66-05	663	492	0	74.21	25.79
5	SAT1/SA/13/61 (AY593842)	SAR61-13	663	487	0	73.45	26.55
6	SAT1/SR/2/58	ZIM58-02	663	487	0	73.45	26.55
7	SAT1/SWA/40/61	SWA61-40	663	486	0	73.3	26.7
8	SAT1/BEC/1/48 (AY593838)	BEC48-01	663	483	0	72.85	27.15
9	SAT1/BOT/1/68 (Z98203)	BOT68-B1	663	481	0	72.55	27.45
10	SAT1/ISR/4/62 (AY593844)	ISR62-04	663	467	0	70.44	29.56

nt, nucleotides
*, not a WRLFMD reference number

Molecular Epidemiology Report Form

Serotype: SAT1
WRL Ref No: KEN/8/2009
Sender Ref: K22/09
Date collected: 01/02/2009
Date received by WRLFMD: 30/04/2009
Date received for sequencing: 01/06/2009
Species: CATTLE
Material used: BTy1
Region sequenced: VP1
RT-PCR primers: SAT1-1C559F/SAT-2B208R;
SAT1U-OS/SAT-2B208R
No. of Nt determined: 663
No. of ambiguities: 0
Gene length: 663

Report date: 14/08/2009
Reported by: N.J. Knowles
Checked by: D.P. King

Topotype: II (NWZ)
Genotype/strain: none designated
Sequence filename: KEN09-08.SEQ
Date sequence last updated: 07/08/2009
Total no. of comparisons: 335
Min. no. of nt for comparison: 300
Total turn-around time: 106 days
Sequencing time: 74 days

Comments:

Ten Most Closely Related Viruses

Pos.	Virus name	Filename	No. nt compared	No. nt matched	No. of ambiguities	% Identity	% Difference
1	SAT1/KEN/16/2009	KEN09-16	663	662	0	99.85	0.15
2	SAT1/KEN/35/2008	KEN08-35	663	661	0	99.7	0.3
3	SAT1/KEN/22/2008	KEN08-22	663	659	0	99.4	0.6
4	SAT1/KEN/23/2008	KEN08-23	663	659	0	99.4	0.6
5	SAT1/KEN/32/2008	KEN08-32	663	659	0	99.4	0.6
6	SAT1/KEN/34/2008	KEN08-34	663	659	0	99.4	0.6
7	SAT1/KEN/25/2008	KEN08-25	663	658	0	99.25	0.75
8	SAT1/KEN/26/2008	KEN08-26	663	658	0	99.25	0.75
9	SAT1/TAN/51/99 (AY442004)	TAN99S51	663	630	0	95.02	4.98
10	SAT1/TAN/25/99	TAN99-25	315	299	16	94.92	5.08

Relationships to Reference Virus Strains

Pos.	Virus name	Filename	No. nt compared	No. nt matched	No. of ambiguities	% Identity	% Difference
1	SAT1/T155/71	TAN71155	663	597	0	90.05	9.95
2	SAT1/SAR/9/81	SAR81-09	629	488	11	77.58	22.42
3	SAT1/RV/11/37 (AY593839)	RHO37-11	663	512	0	77.22	22.78
4	SAT1/RHO/5/66 (AY593846)	RHO66-05	663	509	0	76.77	23.23
5	SAT1/BOT/1/68 (Z98203)	BOT68-B1	663	496	0	74.81	25.19
6	SAT1/SA/13/61 (AY593842)	SAR61-13	663	495	0	74.66	25.34
7	SAT1/SWA/40/61	SWA61-40	663	495	0	74.66	25.34
8	SAT1/SR/2/58	ZIM58-02	663	486	0	73.3	26.7
9	SAT1/BEC/1/48 (AY593838)	BEC48-01	663	485	0	73.15	26.85
10	SAT1/ISR/4/62 (AY593844)	ISR62-04	663	464	0	69.98	30.02

nt, nucleotides
*, not a WRLFMD reference number

Molecular Epidemiology Report Form

Serotype: SAT1
WRL Ref No: KEN/9/2009
Sender Ref: K28/09
Date collected: 01/02/2009
Date received by WRLFMD: 30/04/2009
Date received for sequencing: 01/06/2009
Species: CATTLE
Material used: BTy1
Region sequenced: VP1
RT-PCR primers: SAT1-1C559F/SAT-2B208R;
SAT1U-OS/SAT-2B208R
No. of Nt determined: 663
No. of ambiguities: 0
Gene length: 663

Report date: 14/08/2009
Reported by: N.J. Knowles
Checked by: D.P. King

Topotype: II (NWZ)
Genotype/strain: none designated
Sequence filename: KEN09-09.SEQ
Date sequence last updated: 07/08/2009
Total no. of comparisons: 335
Min. no. of nt for comparison: 300
Total turn-around time: 106 days
Sequencing time: 74 days

Comments:

Ten Most Closely Related Viruses

Pos.	Virus name	Filename	No. nt compared	No. nt matched	No. of ambiguities	% Identity	% Difference
1	SAT1/KEN/14/2009	KEN09-14	663	663	0	100	0
2	SAT1/KEN/15/2009	KEN09-15	663	662	0	99.85	0.15
3	SAT1/TAN/51/99 (AY442004)	TAN99S51	663	622	0	93.82	6.18
4	SAT1/TAN/19/96 (AY442013)	TAN96S19	663	620	0	93.51	6.49
5	SAT1/KEN/35/2008	KEN08-35	663	613	0	92.46	7.54
6	SAT1/TAN/25/99	TAN99-25	315	291	16	92.38	7.62
7	SAT1/KEN/25/2008	KEN08-25	663	612	0	92.31	7.69
8	SAT1/KEN/22/2008	KEN08-22	663	611	0	92.16	7.84
9	SAT1/KEN/23/2008	KEN08-23	663	611	0	92.16	7.84
10	SAT1/KEN/32/2008	KEN08-32	663	611	0	92.16	7.84

Relationships to Reference Virus Strains

Pos.	Virus name	Filename	No. nt compared	No. nt matched	No. of ambiguities	% Identity	% Difference
1	SAT1/T155/71	TAN71155	663	594	0	89.59	10.41
2	SAT1/SAR/9/81	SAR81-09	629	494	11	78.54	21.46
3	SAT1/RV/11/37 (AY593839)	RHO37-11	663	520	0	78.43	21.57
4	SAT1/RHO/5/66 (AY593846)	RHO66-05	663	513	0	77.38	22.62
5	SAT1/SA/13/61 (AY593842)	SAR61-13	663	498	0	75.11	24.89
6	SAT1/SWA/40/61	SWA61-40	663	495	0	74.66	25.34
7	SAT1/SR/2/58	ZIM58-02	663	493	0	74.36	25.64
8	SAT1/BOT/1/68 (Z98203)	BOT68-B1	663	491	0	74.06	25.94
9	SAT1/BEC/1/48 (AY593838)	BEC48-01	663	485	0	73.15	26.85
10	SAT1/ISR/4/62 (AY593844)	ISR62-04	663	463	0	69.83	30.17

nt, nucleotides
*, not a WRLFMD reference number

Molecular Epidemiology Report Form

Serotype: SAT1
WRL Ref No: KEN/12/2009
Sender Ref: K32/09
Date collected: 01/02/2009
Date received by WRLFMD: 30/04/2009
Date received for sequencing: 01/06/2009
Species: CATTLE
Material used: BTy1
Region sequenced: VP1
RT-PCR primers: SAT1-1C559F/SAT-2B208R; SAT1U-OS/SAT-2B208R
No. of Nt determined: 663
No. of ambiguities: 0
Gene length: 663

Report date: 14/08/2009
Reported by: N.J. Knowles
Checked by: D.P. King

Topotype: II (NWZ)
Genotype/strain: none designated
Sequence filename: KEN09-12.SEQ
Date sequence last updated: 07/08/2009
Total no. of comparisons: 335
Min. no. of nt for comparison: 300
Total turn-around time: 106 days
Sequencing time: 74 days

Comments:

Ten Most Closely Related Viruses

Pos.	Virus name	Filename	No. nt compared	No. nt matched	No. of ambiguities	% Identity	% Difference
1	SAT1/KEN/2/2009	KEN09-02	663	656	0	98.94	1.06
2	SAT1/KEN/4/98 (AY441993)	KEN98S04	663	595	0	89.74	10.26
3	SAT1/KEN/9/91 (AY441995)	KEN91S09	663	594	0	89.59	10.41
4	SAT1/KEN/11/91 (AY441994)	KEN91S11	663	593	0	89.44	10.56
5	SAT1/T155/71	TAN71155	663	593	0	89.44	10.56
6	SAT1/KEN/21/2004	KEN04-21	663	592	0	89.29	10.71
7	SAT1/TAN/5/96 (AY442007)	TAN96S05	663	592	0	89.29	10.71
8	SAT1/TAN/25/99	TAN99-25	315	278	16	88.25	11.75
9	SAT1/KEN/25/2008	KEN08-25	663	585	0	88.24	11.76
10	SAT1/KEN/22/2008	KEN08-22	663	584	0	88.08	11.92

Relationships to Reference Virus Strains

Pos.	Virus name	Filename	No. nt compared	No. nt matched	No. of ambiguities	% Identity	% Difference
1	SAT1/T155/71	TAN71155	663	593	0	89.44	10.56
2	SAT1/SAR/9/81	SAR81-09	629	491	11	78.06	21.94
3	SAT1/RV/11/37 (AY593839)	RHO37-11	663	508	0	76.62	23.38
4	SAT1/RHO/5/66 (AY593846)	RHO66-05	663	496	0	74.81	25.19
5	SAT1/SA/13/61 (AY593842)	SAR61-13	663	489	0	73.76	26.24
6	SAT1/SR/2/58	ZIM58-02	663	488	0	73.6	26.4
7	SAT1/SWA/40/61	SWA61-40	663	487	0	73.45	26.55
8	SAT1/BEC/1/48 (AY593838)	BEC48-01	663	482	0	72.7	27.3
9	SAT1/BOT/1/68 (Z98203)	BOT68-B1	663	482	0	72.7	27.3
10	SAT1/ISR/4/62 (AY593844)	ISR62-04	663	467	0	70.44	29.56

nt, nucleotides
*, not a WRLFMD reference number

Molecular Epidemiology Report Form

Serotype: SAT1
WRL Ref No: KEN/14/2009
Sender Ref: K34/09
Date collected: 01/02/2009
Date received by WRLFMD: 30/04/2009
Date received for sequencing: 01/06/2009
Species: CATTLE
Material used: BTy1
Region sequenced: VP1
RT-PCR primers: SAT1-1C559F/SAT-2B208R;
SAT1U-OS/SAT-2B208R
No. of Nt determined: 663
No. of ambiguities: 0
Gene length: 663

Report date: 14/08/2009
Reported by: N.J. Knowles
Checked by: D.P. King

Topotype: II (NWZ)
Genotype/strain: none designated
Sequence filename: KEN09-14.SEQ
Date sequence last updated: 07/08/2009
Total no. of comparisons: 335
Min. no. of nt for comparison: 300
Total turn-around time: 106 days
Sequencing time: 74 days

Comments:

Ten Most Closely Related Viruses

Pos.	Virus name	Filename	No. nt compared	No. nt matched	No. of ambiguities	% Identity	% Difference
1	SAT1/KEN/9/2009	KEN09-09	663	663	0	100	0
2	SAT1/KEN/15/2009	KEN09-15	663	662	0	99.85	0.15
3	SAT1/TAN/51/99 (AY442004)	TAN99S51	663	622	0	93.82	6.18
4	SAT1/TAN/19/96 (AY442013)	TAN96S19	663	620	0	93.51	6.49
5	SAT1/KEN/35/2008	KEN08-35	663	613	0	92.46	7.54
6	SAT1/TAN/25/99	TAN99-25	315	291	16	92.38	7.62
7	SAT1/KEN/25/2008	KEN08-25	663	612	0	92.31	7.69
8	SAT1/KEN/22/2008	KEN08-22	663	611	0	92.16	7.84
9	SAT1/KEN/23/2008	KEN08-23	663	611	0	92.16	7.84
10	SAT1/KEN/32/2008	KEN08-32	663	611	0	92.16	7.84

Relationships to Reference Virus Strains

Pos.	Virus name	Filename	No. nt compared	No. nt matched	No. of ambiguities	% Identity	% Difference
1	SAT1/T155/71	TAN71155	663	594	0	89.59	10.41
2	SAT1/SAR/9/81	SAR81-09	629	494	11	78.54	21.46
3	SAT1/RV/11/37 (AY593839)	RHO37-11	663	520	0	78.43	21.57
4	SAT1/RHO/5/66 (AY593846)	RHO66-05	663	513	0	77.38	22.62
5	SAT1/SA/13/61 (AY593842)	SAR61-13	663	498	0	75.11	24.89
6	SAT1/SWA/40/61	SWA61-40	663	495	0	74.66	25.34
7	SAT1/SR/2/58	ZIM58-02	663	493	0	74.36	25.64
8	SAT1/BOT/1/68 (Z98203)	BOT68-B1	663	491	0	74.06	25.94
9	SAT1/BEC/1/48 (AY593838)	BEC48-01	663	485	0	73.15	26.85
10	SAT1/ISR/4/62 (AY593844)	ISR62-04	663	463	0	69.83	30.17

nt, nucleotides
*, not a WRLFMD reference number

Molecular Epidemiology Report Form

Serotype: SAT1
WRL Ref No: KEN/15/2009
Sender Ref: K39/06
Date collected: 01/03/2009
Date received by WRLFMD: 30/04/2009
Date received for sequencing: 01/06/2009
Species: CATTLE
Material used: BTy1
Region sequenced: VP1
RT-PCR primers: SAT1-1C559F/SAT-2B208R;
SAT1U-OS/SAT-2B208R
No. of Nt determined: 663
No. of ambiguities: 0
Gene length: 663

Report date: 14/08/2009
Reported by: N.J. Knowles
Checked by: D.P. King

Topotype: II (NWZ)
Genotype/strain: none designated
Sequence filename: KEN09-15.SEQ
Date sequence last updated: 07/08/2009
Total no. of comparisons: 335
Min. no. of nt for comparison: 300
Total turn-around time: 106 days
Sequencing time: 74 days

Comments:

Ten Most Closely Related Viruses

Pos.	Virus name	Filename	No. nt compared	No. nt matched	No. of ambiguities	% Identity	% Difference
1	SAT1/KEN/14/2009	KEN09-14	663	662	0	99.85	0.15
2	SAT1/KEN/9/2009	KEN09-09	663	662	0	99.85	0.15
3	SAT1/TAN/51/99 (AY442004)	TAN99S51	663	623	0	93.97	6.03
4	SAT1/TAN/19/96 (AY442013)	TAN96S19	663	621	0	93.67	6.33
5	SAT1/TAN/25/99	TAN99-25	315	292	16	92.7	7.3
6	SAT1/KEN/35/2008	KEN08-35	663	614	0	92.61	7.39
7	SAT1/KEN/25/2008	KEN08-25	663	613	0	92.46	7.54
8	SAT1/KEN/22/2008	KEN08-22	663	612	0	92.31	7.69
9	SAT1/KEN/23/2008	KEN08-23	663	612	0	92.31	7.69
10	SAT1/KEN/32/2008	KEN08-32	663	612	0	92.31	7.69

Relationships to Reference Virus Strains

Pos.	Virus name	Filename	No. nt compared	No. nt matched	No. of ambiguities	% Identity	% Difference
1	SAT1/T155/71	TAN71155	663	595	0	89.74	10.26
2	SAT1/RV/11/37 (AY593839)	RHO37-11	663	520	0	78.43	21.57
3	SAT1/SAR/9/81	SAR81-09	629	493	11	78.38	21.62
4	SAT1/RHO/5/66 (AY593846)	RHO66-05	663	513	0	77.38	22.62
5	SAT1/SA/13/61 (AY593842)	SAR61-13	663	498	0	75.11	24.89
6	SAT1/SWA/40/61	SWA61-40	663	495	0	74.66	25.34
7	SAT1/SR/2/58	ZIM58-02	663	493	0	74.36	25.64
8	SAT1/BOT/1/68 (Z98203)	BOT68-B1	663	491	0	74.06	25.94
9	SAT1/BEC/1/48 (AY593838)	BEC48-01	663	485	0	73.15	26.85
10	SAT1/ISR/4/62 (AY593844)	ISR62-04	663	462	0	69.68	30.32

nt, nucleotides
*, not a WRLFMD reference number

Molecular Epidemiology Report Form

Serotype: SAT1
WRL Ref No: KEN/16/2009
Sender Ref: K40/09
Date collected: 01/03/2009
Date received by WRLFMD: 30/04/2009
Date received for sequencing: 01/06/2009
Species: CATTLE
Material used: BTy1
Region sequenced: VP1
RT-PCR primers: SAT1-1C559F/SAT-2B208R;
SAT1U-OS/SAT-2B208R
No. of Nt determined: 663
No. of ambiguities: 0
Gene length: 663

Report date: 14/08/2009
Reported by: N.J. Knowles
Checked by: D.P. King

Topotype: II (NWZ)
Genotype/strain: none designated
Sequence filename: KEN09-16.SEQ
Date sequence last updated: 07/08/2009
Total no. of comparisons: 335
Min. no. of nt for comparison: 300
Total turn-around time: 106 days
Sequencing time: 74 days

Comments:

Ten Most Closely Related Viruses

Pos.	Virus name	Filename	No. nt compared	No. nt matched	No. of ambiguities	% Identity	% Difference
1	SAT1/KEN/8/2009	KEN09-08	663	662	0	99.85	0.15
2	SAT1/KEN/35/2008	KEN08-35	663	660	0	99.55	0.45
3	SAT1/KEN/22/2008	KEN08-22	663	658	0	99.25	0.75
4	SAT1/KEN/23/2008	KEN08-23	663	658	0	99.25	0.75
5	SAT1/KEN/32/2008	KEN08-32	663	658	0	99.25	0.75
6	SAT1/KEN/34/2008	KEN08-34	663	658	0	99.25	0.75
7	SAT1/KEN/25/2008	KEN08-25	663	657	0	99.1	0.9
8	SAT1/KEN/26/2008	KEN08-26	663	657	0	99.1	0.9
9	SAT1/TAN/25/99	TAN99-25	315	299	16	94.92	5.08
10	SAT1/TAN/51/99 (AY442004)	TAN99S51	663	629	0	94.87	5.13

Relationships to Reference Virus Strains

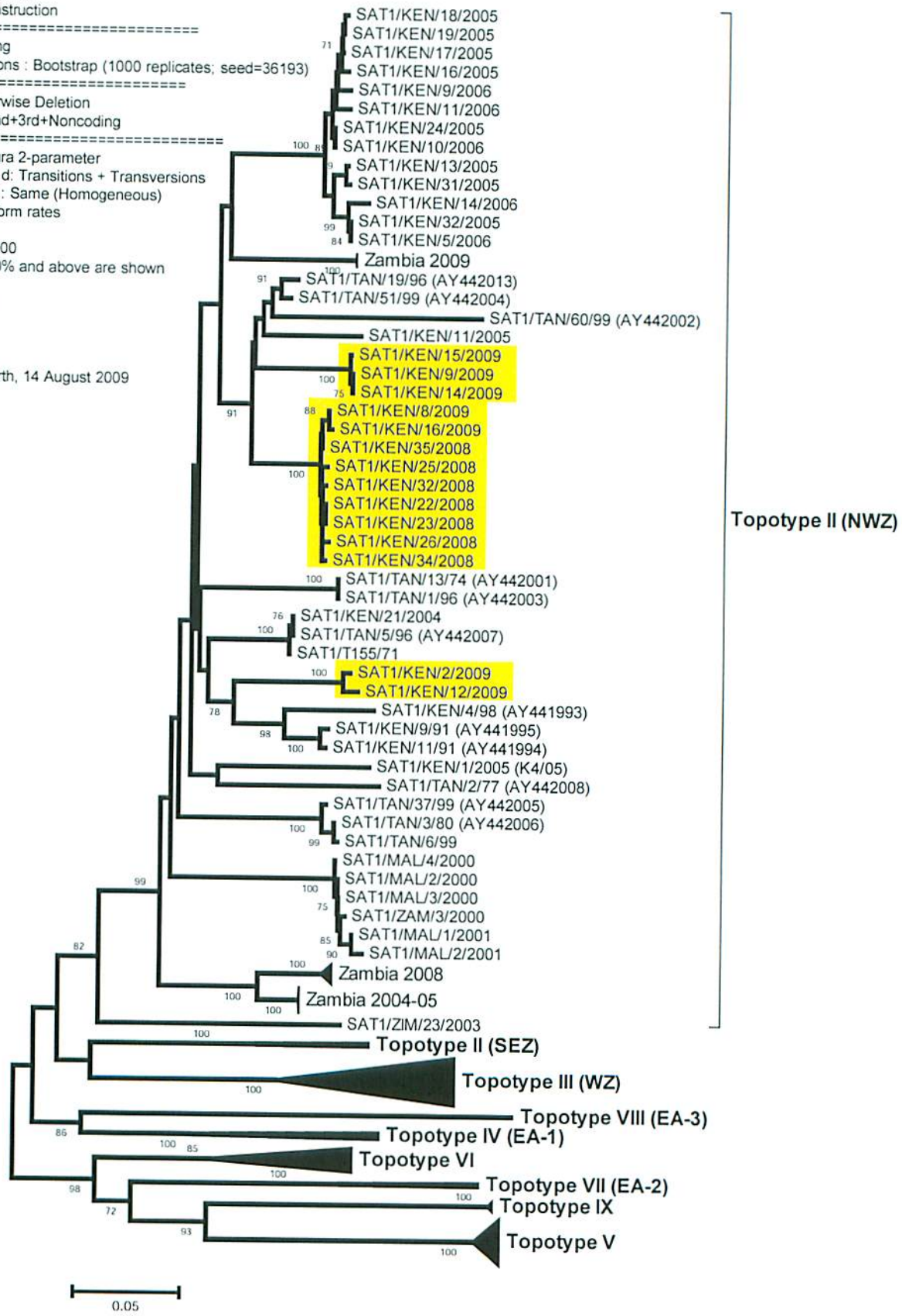
Pos.	Virus name	Filename	No. nt compared	No. nt matched	No. of ambiguities	% Identity	% Difference
1	SAT1/T155/71	TAN71155	663	596	0	89.89	10.11
2	SAT1/SAR/9/81	SAR81-09	629	487	11	77.42	22.58
3	SAT1/RV/11/37 (AY593839)	RHO37-11	663	513	0	77.38	22.62
4	SAT1/RHO/5/66 (AY593846)	RHO66-05	663	510	0	76.92	23.08
5	SAT1/BOT/1/68 (Z98203)	BOT68-B1	663	495	0	74.66	25.34
6	SAT1/SA/13/61 (AY593842)	SAR61-13	663	494	0	74.51	25.49
7	SAT1/SWA/40/61	SWA61-40	663	494	0	74.51	25.49
8	SAT1/SR/2/58	ZIM58-02	663	485	0	73.15	26.85
9	SAT1/BEC/1/48 (AY593838)	BEC48-01	663	484	0	73	27
10	SAT1/ISR/4/62 (AY593844)	ISR62-04	663	464	0	69.98	30.02

nt, nucleotides
*, not a WRLFMD reference number

Report on FMDV SAT 1 in Kenya in 2008-2009

Batch: WRLFMD/2009/00022

Software: MEGA 4.0
No. of Taxa : 137
Data File : n:\evd\meg\db\fmdv\sat1\KEN2009a.meg
Data Title : SAT 1 Kenya 2008-2009
Data Type : Nucleotide (Coding)
Analysis : Phylogeny reconstruction
Tree Inference : ==========
->Method : Neighbor-Joining
->Phylogeny Test and options : Bootstrap (1000 replicates; seed=36193)
Include Sites : ==========
->Gaps/Missing Data : Pairwise Deletion
->Codon Positions : 1st+2nd+3rd+Noncoding
Substitution Model : ==========
->Model : Nucleotide: Kimura 2-parameter
->Substitutions to Include : d: Transitions + Transversions
->Pattern among Lineages : Same (Homogeneous)
->Rates among sites : Uniform rates
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, 14 August 2009