

Serotype: SAT1	Report date: 08/09/2006						
WRL Ref No: BOT/12/2006							
Sender Ref: Thokwana Cow 5 Feet							
Date collected: 09/06/2006	Topotype: Western Zimbabwe (WZ)						
Date received by WRLFMD: 05/07/2006	Genotype/strain: none designated						
Date received for sequencing: 10/07/2006	Sequence filename: BOT06-12.SEQ						
Species: Cattle	Date sequence last updated: 06/09/2006						
Material used: BTy1	Total no. of comparisons: 285						
Region sequenced: VP1	Min. no. of nt for comparison: 300						
RT-PCR primers: SAT1-1C559F/SAT-2B208R; SAT1-P1-1228F/SAT-2B208R	Total turn-around time: 65 days						
No. of Nt determined: 663	Sequencing time: 60 days						
No. of ambiguities: 0							
Gene length: 663							
Comments:							
<b>Ten Most Closely Related Viruses</b>							
Pos.	Virus name	Filename	No. nt compared	No. nt matched	No. of ambiguities	% Identity	% Difference
1	SAT1/BOT/13/2006	BOT06-13	663	663	0	100	0
2	SAT1/BOT/16/2006	BOT06-16	663	663	0	100	0
3	SAT1/BOT/17/2006	BOT06-17	663	663	0	100	0
4	SAT1/BOT/14/2006	BOT06-14	663	663	0	100	0
5	SAT1/BOT/15/2006	BOT06-15	663	662	0	99.85	0.15
6	SAT1/BOT/18/2006	BOT06-18	663	661	0	99.7	0.3
7	SAT1/NMB/1/2000	NMB00-01	663	618	0	93.21	6.79
8	SAT1/ZIM/P45/91 MT6 buffalo	ZIM91B72	392	362	5	92.35	7.65
9	SAT1/ZAM/4/2000	ZAM00-04	663	601	0	90.65	9.35
10	SAT1/SWA/2/89 (OVI)	NAM89-AA	420	374	0	89.05	10.95
<b>Relationships to Reference Virus Strains</b>							
Pos.	Virus name	Filename	No. nt compared	No. nt matched	No. of ambiguities	% Identity	% Difference
1	SAT1/SWA/40/61 AY593843	SWA61-40	663	583	0	87.93	12.07
2	SAT1/SA/13/61 AY593842	SAR61-13	663	579	0	87.33	12.67
3	SAT1/BOT/1/68 [Z98203]	BOT68-B1	663	574	0	86.58	13.42
4	SAT1/SA/2/58 AY593841	SAR58-02	663	569	0	85.82	14.18
5	SAT1/BEC/1/48 AY593838	BEC48-01	663	551	0	83.11	16.89
6	SAT1/RHO/5/66 AY593846	RHO66-05	663	506	0	76.32	23.68
7	SAT1/RV/11/37 AY593839	RHO37-11	663	506	0	76.32	23.68
8	SAT1/T155/71	TAN71155	663	497	0	74.96	25.04
9	SAT1/SAR/9/81	SAR81-09	629	458	11	72.81	27.19
10	SAT1/ISR/4/62 AY593844	ISR62-04	663	445	0	67.12	32.88
nt, nucleotides							
*, not a WRLFMD reference number							

Serotype: SAT1 Report date: 08/09/2006  
WRL Ref No: BOT/13/2006  
Sender Ref: Thokwana Cow 5 Feet 2  
Date collected: 09/06/2006  
Date received by WRLFMD: 05/07/2006 Topotype: Western Zimbabwe (WZ)  
Date received for sequencing: 10/07/2006 Genotype/strain: none designated  
Species: Cattle Sequence filename: BOT06-13.SEQ  
Material used: BTy1 Date sequence last updated: 06/09/2006  
Region sequenced: VP1 Total no. of comparisons: 285  
RT-PCR primers: SAT1-1C559F/SAT-2B208R; Min. no. of nt for comparison: 300  
SAT1-P1-1228F/SAT-2B208R Total turn-around time: 65 days  
No. of Nt determined: 663 Sequencing time: 60 days  
No. of ambiguities: 0  
Gene length: 663

Comments:

#### Ten Most Closely Related Viruses

Pos.	Virus name	Filename	No. nt compared	No. nt matched	No. of ambiguities	% Identity	% Difference
1	SAT1/BOT/12/2006	BOT06-12	663	663	0	100	0
2	SAT1/BOT/16/2006	BOT06-16	663	663	0	100	0
3	SAT1/BOT/17/2006	BOT06-17	663	663	0	100	0
4	SAT1/BOT/14/2006	BOT06-14	663	663	0	100	0
5	SAT1/BOT/15/2006	BOT06-15	663	662	0	99.85	0.15
6	SAT1/BOT/18/2006	BOT06-18	663	661	0	99.7	0.3
7	SAT1/NMB/1/2000	NMB00-01	663	618	0	93.21	6.79
8	SAT1/ZIM/P45/91 MT6 buffalo	ZIM91B72	392	362	5	92.35	7.65
9	SAT1/ZAM/4/2000	ZAM00-04	663	601	0	90.65	9.35
10	SAT1/SWA/2/89 (OVI)	NAM89-AA	420	374	0	89.05	10.95

#### Relationships to Reference Virus Strains

Pos.	Virus name	Filename	No. nt compared	No. nt matched	No. of ambiguities	% Identity	% Difference
1	SAT1/SWA/40/61 AY593843	SWA61-40	663	583	0	87.93	12.07
2	SAT1/SA/13/61 AY593842	SAR61-13	663	579	0	87.33	12.67
3	SAT1/BOT/1/68 [Z98203]	BOT68-B1	663	574	0	86.58	13.42
4	SAT1/SA/2/58 AY593841	SAR58-02	663	569	0	85.82	14.18
5	SAT1/BEC/1/48 AY593838	BEC48-01	663	551	0	83.11	16.89
6	SAT1/RHO/5/66 AY593846	RHO66-05	663	506	0	76.32	23.68
7	SAT1/RV/11/37 AY593839	RHO37-11	663	506	0	76.32	23.68
8	SAT1/T155/71	TAN71155	663	497	0	74.96	25.04
9	SAT1/SAR/9/81	SAR81-09	629	458	11	72.81	27.19
10	SAT1/ISR/4/62 AY593844	ISR62-04	663	445	0	67.12	32.88

nt, nucleotides

\*, not a WRLFMD reference number

Serotype: SAT1	Report date: 08/09/2006						
WRL Ref No: BOT/14/2006							
Sender Ref: Tlhabana Cow 4							
Date collected: 09/06/2006							
Date received by WRLFMD: 05/07/2006	Topotype: Western Zimbabwe (WZ)						
Date received for sequencing: 10/07/2006	Genotype/strain: none designated						
Species: Cattle	Sequence filename: BOT06-14.SEQ						
Material used: BTy1	Date sequence last updated: 06/09/2006						
Region sequenced: VP1	Total no. of comparisons: 285						
RT-PCR primers: SAT1-1C559F/SAT-2B208R; SAT1-P1-1228F/SAT-2B208R	Min. no. of nt for comparison: 300						
No. of Nt determined: 663	Total turn-around time: 65 days						
No. of ambiguities: 0	Sequencing time: 60 days						
Gene length: 663							
Comments:							
<b>Ten Most Closely Related Viruses</b>							
Pos.	Virus name	Filename	No. nt compared	No. nt matched	No. of ambiguities	% Identity	% Difference
1	SAT1/BOT/12/2006	BOT06-12	663	663	0	100	0
2	SAT1/BOT/16/2006	BOT06-16	663	663	0	100	0
3	SAT1/BOT/17/2006	BOT06-17	663	663	0	100	0
4	SAT1/BOT/13/2006	BOT06-13	663	663	0	100	0
5	SAT1/BOT/15/2006	BOT06-15	663	662	0	99.85	0.15
6	SAT1/BOT/18/2006	BOT06-18	663	661	0	99.7	0.3
7	SAT1/NMB/1/2000	NMB00-01	663	618	0	93.21	6.79
8	SAT1/ZIM/P45/91 MT6 buffalo	ZIM91B72	392	362	5	92.35	7.65
9	SAT1/ZAM/4/2000	ZAM00-04	663	601	0	90.65	9.35
10	SAT1/SWA/2/89 (OVI)	NAM89-AA	420	374	0	89.05	10.95
<b>Relationships to Reference Virus Strains</b>							
Pos.	Virus name	Filename	No. nt compared	No. nt matched	No. of ambiguities	% Identity	% Difference
1	SAT1/SWA/40/61 AY593843	SWA61-40	663	583	0	87.93	12.07
2	SAT1/SA/13/61 AY593842	SAR61-13	663	579	0	87.33	12.67
3	SAT1/BOT/1/68 [Z98203]	BOT68-B1	663	574	0	86.58	13.42
4	SAT1/SA/2/58 AY593841	SAR58-02	663	569	0	85.82	14.18
5	SAT1/BEC/1/48 AY593838	BEC48-01	663	551	0	83.11	16.89
6	SAT1/RHO/5/66 AY593846	RHO66-05	663	506	0	76.32	23.68
7	SAT1/RV/11/37 AY593839	RHO37-11	663	506	0	76.32	23.68
8	SAT1/T155/71	TAN71155	663	497	0	74.96	25.04
9	SAT1/SAR/9/81	SAR81-09	629	458	11	72.81	27.19
10	SAT1/ISR/4/62 AY593844	ISR62-04	663	445	0	67.12	32.88
nt, nucleotides							
*, not a WRLFMD reference number							

Serotype: SAT1 Report date: 08/09/2006  
WRL Ref No: BOT/15/2006  
Sender Ref: Nala  
Date collected: 09/06/2006 Topotype: Western Zimbabwe (WZ)  
Date received by WRLFMD: 05/07/2006 Genotype/strain: none designated  
Date received for sequencing: 10/07/2006 Sequence filename: BOT06-15.SEQ  
Species: Cattle Date sequence last updated: 06/09/2006  
Material used: BTy1 Total no. of comparisons: 285  
Region sequenced: VP1 Min. no. of nt for comparison: 300  
RT-PCR primers: SAT1-1C559F/SAT-2B208R; Total turn-around time: 65 days  
SAT1-P1-1228F/SAT-2B208R Sequencing time: 60 days  
No. of Nt determined: 663  
No. of ambiguities: 0  
Gene length: 663

Comments:

#### Ten Most Closely Related Viruses

Pos.	Virus name	Filename	No. nt compared	No. nt matched	No. of ambiguities	% Identity	% Difference
1	SAT1/BOT/14/2006	BOT06-14	663	662	0	99.85	0.15
2	SAT1/BOT/16/2006	BOT06-16	663	662	0	99.85	0.15
3	SAT1/BOT/12/2006	BOT06-12	663	662	0	99.85	0.15
4	SAT1/BOT/13/2006	BOT06-13	663	662	0	99.85	0.15
5	SAT1/BOT/17/2006	BOT06-17	663	662	0	99.85	0.15
6	SAT1/BOT/18/2006	BOT06-18	663	660	0	99.55	0.45
7	SAT1/NMB/1/2000	NMB00-01	663	619	0	93.36	6.64
8	SAT1/ZIM/P45/91 MT6 buffalo	ZIM91B72	392	362	5	92.35	7.65
9	SAT1/ZAM/4/2000	ZAM00-04	663	602	0	90.8	9.2
10	SAT1/SWA/2/89 (OVI)	NAM89-AA	420	374	0	89.05	10.95

#### Relationships to Reference Virus Strains

Pos.	Virus name	Filename	No. nt compared	No. nt matched	No. of ambiguities	% Identity	% Difference
1	SAT1/SWA/40/61 AY593843	SWA61-40	663	583	0	87.93	12.07
2	SAT1/SA/13/61 AY593842	SAR61-13	663	580	0	87.48	12.52
3	SAT1/BOT/1/68 [Z98203]	BOT68-B1	663	575	0	86.73	13.27
4	SAT1/SA/2/58 AY593841	SAR58-02	663	569	0	85.82	14.18
5	SAT1/BEC/1/48 AY593838	BEC48-01	663	551	0	83.11	16.89
6	SAT1/RHO/5/66 AY593846	RHO66-05	663	506	0	76.32	23.68
7	SAT1/RV/11/37 AY593839	RHO37-11	663	506	0	76.32	23.68
8	SAT1/T155/71	TAN71155	663	497	0	74.96	25.04
9	SAT1/SAR/9/81	SAR81-09	629	459	11	72.97	27.03
10	SAT1/ISR/4/62 AY593844	ISR62-04	663	445	0	67.12	32.88

nt, nucleotides

\*, not a WRLFMD reference number

Serotype: SAT1	Report date: 08/09/2006						
WRL Ref No: BOT/16/2006							
Sender Ref: Calf 1 Oral tissue							
Date collected: 09/06/2006							
Date received by WRLFMD: 05/07/2006	Topotype: Western Zimbabwe (WZ)						
Date received for sequencing: 10/07/2006	Genotype/strain: none designated						
Species: Cattle	Sequence filename: BOT06-16.SEQ						
Material used: BTy1	Date sequence last updated: 06/09/2006						
Region sequenced: VP1	Total no. of comparisons: 285						
RT-PCR primers: SAT1-1C559F/SAT-2B208R; SAT1-P1-1228F/SAT-2B208R	Min. no. of nt for comparison: 300						
No. of Nt determined: 663	Total turn-around time: 65 days						
No. of ambiguities: 0	Sequencing time: 60 days						
Gene length: 663							
Comments:							
<b>Ten Most Closely Related Viruses</b>							
Pos.	Virus name	Filename	No. nt compared	No. nt matched	No. of ambiguities	% Identity	% Difference
1	SAT1/BOT/14/2006	BOT06-14	663	663	0	100	0
2	SAT1/BOT/13/2006	BOT06-13	663	663	0	100	0
3	SAT1/BOT/12/2006	BOT06-12	663	663	0	100	0
4	SAT1/BOT/17/2006	BOT06-17	663	663	0	100	0
5	SAT1/BOT/15/2006	BOT06-15	663	662	0	99.85	0.15
6	SAT1/BOT/18/2006	BOT06-18	663	661	0	99.7	0.3
7	SAT1/NMB/1/2000	NMB00-01	663	618	0	93.21	6.79
8	SAT1/ZIM/P45/91 MT6 buffalo	ZIM91B72	392	362	5	92.35	7.65
9	SAT1/ZAM/4/2000	ZAM00-04	663	601	0	90.65	9.35
10	SAT1/SWA/2/89 (OVI)	NAM89-AA	420	374	0	89.05	10.95
<b>Relationships to Reference Virus Strains</b>							
Pos.	Virus name	Filename	No. nt compared	No. nt matched	No. of ambiguities	% Identity	% Difference
1	SAT1/SWA/40/61 AY593843	SWA61-40	663	583	0	87.93	12.07
2	SAT1/SA/13/61 AY593842	SAR61-13	663	579	0	87.33	12.67
3	SAT1/BOT/1/68 [Z98203]	BOT68-B1	663	574	0	86.58	13.42
4	SAT1/SA/2/58 AY593841	SAR58-02	663	569	0	85.82	14.18
5	SAT1/BEC/1/48 AY593838	BEC48-01	663	551	0	83.11	16.89
6	SAT1/RHO/5/66 AY593846	RHO66-05	663	506	0	76.32	23.68
7	SAT1/RV/11/37 AY593839	RHO37-11	663	506	0	76.32	23.68
8	SAT1/T155/71	TAN71155	663	497	0	74.96	25.04
9	SAT1/SAR/9/81	SAR81-09	629	458	11	72.81	27.19
10	SAT1/ISR/4/62 AY593844	ISR62-04	663	445	0	67.12	32.88
nt, nucleotides							
*, not a WRLFMD reference number							

Serotype: SAT1 Report date: 08/09/2006  
WRL Ref No: BOT/17/2006  
Sender Ref: Calf 1  
Date collected: 09/06/2006 Topotype: Western Zimbabwe (WZ)  
Date received by WRLFMD: 05/07/2006 Genotype/strain: none designated  
Date received for sequencing: 10/07/2006 Sequence filename: BOT06-17.SEQ  
Species: Cattle Date sequence last updated: 06/09/2006  
Material used: BTy2 Total no. of comparisons: 285  
Region sequenced: VP1 Min. no. of nt for comparison: 300  
RT-PCR primers: SAT1-1C559F/SAT-2B208R; SAT1-P1-1228F/SAT-2B208R Total turn-around time: 65 days  
Sequencing time: 60 days  
No. of Nt determined: 663  
No. of ambiguities: 0  
Gene length: 663

Comments:

#### Ten Most Closely Related Viruses

Pos.	Virus name	Filename	No. nt compared	No. nt matched	No. of ambiguities	% Identity	% Difference
1	SAT1/BOT/14/2006	BOT06-14	663	663	0	100	0
2	SAT1/BOT/13/2006	BOT06-13	663	663	0	100	0
3	SAT1/BOT/12/2006	BOT06-12	663	663	0	100	0
4	SAT1/BOT/16/2006	BOT06-16	663	663	0	100	0
5	SAT1/BOT/15/2006	BOT06-15	663	662	0	99.85	0.15
6	SAT1/BOT/18/2006	BOT06-18	663	661	0	99.7	0.3
7	SAT1/NMB/1/2000	NMB00-01	663	618	0	93.21	6.79
8	SAT1/ZIM/P45/91 MT6 buffalo	ZIM91B72	392	362	5	92.35	7.65
9	SAT1/ZAM/4/2000	ZAM00-04	663	601	0	90.65	9.35
10	SAT1/SWA/2/89 (OVI)	NAM89-AA	420	374	0	89.05	10.95

#### Relationships to Reference Virus Strains

Pos.	Virus name	Filename	No. nt compared	No. nt matched	No. of ambiguities	% Identity	% Difference
1	SAT1/SWA/40/61 AY593843	SWA61-40	663	583	0	87.93	12.07
2	SAT1/SA/13/61 AY593842	SAR61-13	663	579	0	87.33	12.67
3	SAT1/BOT/1/68 [Z98203]	BOT68-B1	663	574	0	86.58	13.42
4	SAT1/SA/2/58 AY593841	SAR58-02	663	569	0	85.82	14.18
5	SAT1/BEC/1/48 AY593838	BEC48-01	663	551	0	83.11	16.89
6	SAT1/RHO/5/66 AY593846	RHO66-05	663	506	0	76.32	23.68
7	SAT1/RV/11/37 AY593839	RHO37-11	663	506	0	76.32	23.68
8	SAT1/T155/71	TAN71155	663	497	0	74.96	25.04
9	SAT1/SAR/9/81	SAR81-09	629	458	11	72.81	27.19
10	SAT1/ISR/4/62 AY593844	ISR62-04	663	445	0	67.12	32.88

nt, nucleotides

\*, not a WRLFMD reference number

Serotype: SAT1	Report date: 08/09/2006						
WRL Ref No: BOT/18/2006							
Sender Ref: Naana							
Date collected: 09/06/2006							
Date received by WRLFMD: 05/07/2006	Topotype: Western Zimbabwe (WZ)						
Date received for sequencing: 10/07/2006	Genotype/strain: none designated						
Species: Cattle	Sequence filename: BOT06-18.SEQ						
Material used: BTy2	Date sequence last updated: 06/09/2006						
Region sequenced: VP1	Total no. of comparisons: 285						
RT-PCR primers: SAT1-1C559F/SAT-2B208R; SAT1-P1-1228F/SAT-2B208R	Min. no. of nt for comparison: 300						
No. of Nt determined: 663	Total turn-around time: 65 days						
No. of ambiguities: 0	Sequencing time: 60 days						
Gene length: 663							
Comments:							
<b>Ten Most Closely Related Viruses</b>							
Pos.	Virus name	Filename	No. nt compared	No. nt matched	No. of ambiguities	% Identity	% Difference
1	SAT1/BOT/14/2006	BOT06-14	663	661	0	99.7	0.3
2	SAT1/BOT/13/2006	BOT06-13	663	661	0	99.7	0.3
3	SAT1/BOT/12/2006	BOT06-12	663	661	0	99.7	0.3
4	SAT1/BOT/17/2006	BOT06-17	663	661	0	99.7	0.3
5	SAT1/BOT/16/2006	BOT06-16	663	661	0	99.7	0.3
6	SAT1/BOT/15/2006	BOT06-15	663	660	0	99.55	0.45
7	SAT1/NMB/1/2000	NMB00-01	663	616	0	92.91	7.09
8	SAT1/ZIM/P45/91 MT6 buffalo	ZIM91B72	392	361	5	92.09	7.91
9	SAT1/ZAM/4/2000	ZAM00-04	663	599	0	90.35	9.65
10	SAT1/SWA/2/89 (OVI)	NAM89-AA	420	373	0	88.81	11.19
<b>Relationships to Reference Virus Strains</b>							
Pos.	Virus name	Filename	No. nt compared	No. nt matched	No. of ambiguities	% Identity	% Difference
1	SAT1/SWA/40/61 AY593843	SWA61-40	663	581	0	87.63	12.37
2	SAT1/SA/13/61 AY593842	SAR61-13	663	577	0	87.03	12.97
3	SAT1/BOT/1/68 [Z98203]	BOT68-B1	663	572	0	86.27	13.73
4	SAT1/SA/2/58 AY593841	SAR58-02	663	567	0	85.52	14.48
5	SAT1/BEC/1/48 AY593838	BEC48-01	663	549	0	82.81	17.19
6	SAT1/RHO/5/66 AY593846	RHO66-05	663	504	0	76.02	23.98
7	SAT1/RV/11/37 AY593839	RHO37-11	663	504	0	76.02	23.98
8	SAT1/T155/71	TAN71155	663	495	0	74.66	25.34
9	SAT1/SAR/9/81	SAR81-09	629	456	11	72.5	27.5
10	SAT1/ISR/4/62 AY593844	ISR62-04	663	443	0	66.82	33.18
nt, nucleotides							
*, not a WRLFMD reference number							

# Report on FMDV SAT 1 from Botswana in 2006



Unrooted Neighbor-joining tree based on a comparison of the complete VP1 gene (663 nt). The tree was outgroup-rooted using the SAT1/ISR/4/62 & SAT1/UGA/47/71 sequences.

\*, not a WRLFMD Ref. No.