

Serotype: SAT2 Report date: 24/04/2008  
WRL RefNo: BOT/6/2008  
Sender Ref: BOT 09/08  
Date collected: 2008  
Date received by WRLFMD: 10/04/2008 Topotype: none defined  
Date received for sequencing: 16/04/2008 Genotype/strain: none designated  
Species: Cattle Sequence filename: BOT08-06.SEQ  
Material used: BTy1 Date sequence last updated: 22/04/2008  
Region sequenced: VP1 Total no. of comparisons: 392  
RT-PCR primers: SAT2-1C445F/SAT-2B208R; Min. no. of nt for comparison: 300  
SAT2-P1-1223F/SAT-2B208R Total turn-around time: 14 days  
No. of Nt determined: 648 Sequencing time: 8 days  
No. of ambiguities: 0  
Gene length: 648

Comments:

#### Ten Most Closely Related Viruses

Pos.	Virus name	Filename	No. nt compared	No. nt matched	No. of ambiguities	% Identity	% Difference
1	SAT2/BOT/8/2008	BOT08-08	648	647	0	99.85	0.15
2	SAT2/BOT/10/2008	BOT08-10	648	646	0	99.69	0.31
3	SAT2/BOT/2/2007	BOT07-02	648	644	0	99.38	0.62
4	SAT2/BOT/3/2007	BOT07-03	648	644	0	99.38	0.62
5	SAT2/BOT/5/2007	BOT07-05	648	644	0	99.38	0.62
6	SAT2/BOT/6/2007	BOT07-06	648	643	0	99.23	0.77
7	SAT2/BOT/9/2008	BOT08-09	648	643	0	99.23	0.77
8	SAT2/BOT/11/2008	BOT08-11	648	641	0	98.92	1.08
9	SAT2/BOT/7/2008	BOT08-07	648	641	0	98.92	1.08
10	SAT2/BOT/P3/98 (buff 7)	BOW98-04	352	309	19	87.78	12.22

#### Relationships to Reference Virus Strains

Pos.	Virus name	Filename	No. nt compared	No. nt matched	No. of ambiguities	% Identity	% Difference
1	SAT2/RHO/1/48 [AJ251475]	ZAM48A01	648	528	0	81.48	18.52
2	SAT2/K52/84 (Kenya)	KEN84K52	648	502	0	77.47	22.53
3	SAT2/K183/74 (Kenya)	KEN74183	648	500	0	77.16	22.84
4	SAT2/SA/106/59 (AY593848)	RSA59--A	648	499	0	77.01	22.99
5	SAT2/ZIM/7/83 [AF136607]	ZIM83A07	648	482	0	74.38	25.62
6	SAT2/GHA/2/90 (AF479415)	GHA90A02	648	472	0	72.84	27.16
7	SAT2/KEN/3/57	KEN57-03	648	461	0	71.14	28.86
8	SAT2/ANG/4/74 [AF479417]	ANG74-04	648	458	0	70.68	29.32
9	SAT2/SAU/6/2000 [AF367135]	SAU00A06	647	454	1	70.17	29.83
10	SAT2/GAM/8/79 [AF479410]	GAM79-08	648	452	0	69.75	30.25

nt, nucleotides

\*, not a WRLFMD reference number

Serotype: SAT2	Report date: 24/04/2008						
WRL RefNo: BOT/7/2008							
Sender Ref: BOT 10/08							
Date collected: 2008	Topotype: none defined						
Date received by WRLFMD: 10/04/2008	Genotype/strain: none designated						
Date received for sequencing: 16/04/2008	Sequence filename: BOT08-07.SEQ						
Species: Cattle	Date sequence last updated: 22/04/2008						
Material used: BTy1	Total no. of comparisons: 392						
Region sequenced: VP1	Min. no. of nt for comparison: 300						
RT-PCR primers: SAT2-1C445F/SAT-2B208R; SAT2-P1-1223F/SAT-2B208R	Total turn-around time: 14 days						
No. of Nt determined: 648	Sequencing time: 8 days						
No. of ambiguities: 0							
Gene length: 648							
Comments:							
<b>Ten Most Closely Related Viruses</b>							
Pos.	Virus name	Filename	No. nt compared	No. nt matched	No. of ambiguities	% Identity	% Difference
1	SAT2/BOT/11/2008	BOT08-11	648	648	0	100	0
2	SAT2/BOT/2/2007	BOT07-02	648	645	0	99.54	0.46
3	SAT2/BOT/3/2007	BOT07-03	648	645	0	99.54	0.46
4	SAT2/BOT/5/2007	BOT07-05	648	645	0	99.54	0.46
5	SAT2/BOT/6/2007	BOT07-06	648	644	0	99.38	0.62
6	SAT2/BOT/10/2008	BOT08-10	648	643	0	99.23	0.77
7	SAT2/BOT/8/2008	BOT08-08	648	642	0	99.07	0.93
8	SAT2/BOT/9/2008	BOT08-09	648	642	0	99.07	0.93
9	SAT2/BOT/6/2008	BOT08-06	648	641	0	98.92	1.08
10	SAT2/BOT/P3/98 (buff 7)	BOW98-04	352	311	19	88.35	11.65
<b>Relationships to Reference Virus Strains</b>							
Pos.	Virus name	Filename	No. nt compared	No. nt matched	No. of ambiguities	% Identity	% Difference
1	SAT2/RHO/1/48 [AJ251475]	ZAM48A01	648	531	0	81.94	18.06
2	SAT2/K183/74 (Kenya)	KEN74183	648	503	0	77.62	22.38
3	SAT2/K52/84 (Kenya)	KEN84K52	648	501	0	77.31	22.69
4	SAT2/SA/106/59 (AY593848)	RSA59--A	648	500	0	77.16	22.84
5	SAT2/ZIM/7/83 [AF136607]	ZIM83A07	648	485	0	74.85	25.15
6	SAT2/GHA/2/90 (AF479415)	GHA90A02	648	474	0	73.15	26.85
7	SAT2/KEN/3/57	KEN57-03	648	464	0	71.6	28.4
8	SAT2/ANG/4/74 [AF479417]	ANG74-04	648	460	0	70.99	29.01
9	SAT2/SAU/6/2000 [AF367135]	SAU00A06	647	459	1	70.94	29.06
10	SAT2/GAM/8/79 [AF479410]	GAM79-08	648	454	0	70.06	29.94
nt, nucleotides							
*, not a WRLFMD reference number							

Serotype: SAT2		Report date: 24/04/2008					
WRL Ref No: BOT/8/2008							
Sender Ref: BOT 11/08							
Date collected: 2008		Topotype: none defined					
Date received by WRLFMD: 10/04/2008		Genotype/strain: none designated					
Date received for sequencing: 16/04/2008		Sequence filename: BOT08-08.SEQ					
Species: Cattle		Date sequence last updated: 24/04/2008					
Material used: BTy1		Total no. of comparisons: 392					
Region sequenced: VP1		Min. no. of nt for comparison: 300					
RT-PCR primers: SAT2-1C445F/SAT-2B208R; SAT2-P1-1223F/SAT-2B208R		Total turn-around time: 14 days					
No. of Nt determined: 648		Sequencing time: 8 days					
No. of ambiguities: 0							
Gene length: 648							
Comments:							
<b>Ten Most Closely Related Viruses</b>							
Pos.	Virus name	Filename	No. nt compared	No. nt matched	No. of ambiguities	% Identity	% Difference
1	SAT2/BOT/10/2008	BOT08-10	648	647	0	99.85	0.15
2	SAT2/BOT/6/2008	BOT08-06	648	647	0	99.85	0.15
3	SAT2/BOT/2/2007	BOT07-02	648	645	0	99.54	0.46
4	SAT2/BOT/3/2007	BOT07-03	648	645	0	99.54	0.46
5	SAT2/BOT/5/2007	BOT07-05	648	645	0	99.54	0.46
6	SAT2/BOT/6/2007	BOT07-06	648	644	0	99.38	0.62
7	SAT2/BOT/9/2008	BOT08-09	648	644	0	99.38	0.62
8	SAT2/BOT/11/2008	BOT08-11	648	642	0	99.07	0.93
9	SAT2/BOT/7/2008	BOT08-07	648	642	0	99.07	0.93
10	SAT2/BOT/P3/98 (buff 7)	BOW98-04	352	309	19	87.78	12.22
<b>Relationships to Reference Virus Strains</b>							
Pos.	Virus name	Filename	No. nt compared	No. nt matched	No. of ambiguities	% Identity	% Difference
1	SAT2/RHO/1/48 [AJ251475]	ZAM48A01	648	529	0	81.64	18.36
2	SAT2/K52/84 (Kenya)	KEN84K52	648	503	0	77.62	22.38
3	SAT2/K183/74 (Kenya)	KEN74183	648	501	0	77.31	22.69
4	SAT2/SA/106/59 (AY593848)	RSA59-A	648	500	0	77.16	22.84
5	SAT2/ZIM/7/83 [AF136607]	ZIM83A07	648	483	0	74.54	25.46
6	SAT2/GHA/2/90 (AF479415)	GHA90A02	648	473	0	72.99	27.01
7	SAT2/KEN/3/57	KEN57-03	648	462	0	71.3	28.7
8	SAT2/ANG/4/74 [AF479417]	ANG74-04	648	459	0	70.83	29.17
9	SAT2/SAU/6/2000 [AF367135]	SAU00A06	647	455	1	70.32	29.68
10	SAT2/GAM/8/79 [AF479410]	GAM79-08	648	453	0	69.91	30.09
nt, nucleotides							
*, not a WRLFMD reference number							

Serotype: SAT2  
WRL RefNo: BOT/9/2008  
Sender Ref: BOT 12/08  
Date collected: 2008  
Date received by WRLFMD: 10/04/2008  
Date received for sequencing: 16/04/2008  
Species: Cattle  
Material used: BTy1  
Region sequenced: VP1  
RT-PCR primers: SAT2-1C445F/SAT-2B208R;  
SAT2-P1-1223F/SAT-2B208R  
No. of Nt determined: 648  
No. of ambiguities: 0  
Gene length: 648

Report date: 24/04/2008  
Topotype: none defined  
Genotype/strain: none designated  
Sequence filename: BOT08-09.SEQ  
Date sequence last updated: 22/04/2008  
Total no. of comparisons: 392  
Min. no. of nt for comparison: 300  
Total turn-around time: 14 days  
Sequencing time: 8 days

Comments:

#### Ten Most Closely Related Viruses

Pos.	Virus name	Filename	No. nt compared	No. nt matched	No. of ambiguities	% Identity	% Difference
1	SAT2/BOT/10/2008	BOT08-10	648	645	0	99.54	0.46
2	SAT2/BOT/2/2007	BOT07-02	648	645	0	99.54	0.46
3	SAT2/BOT/3/2007	BOT07-03	648	645	0	99.54	0.46
4	SAT2/BOT/5/2007	BOT07-05	648	645	0	99.54	0.46
5	SAT2/BOT/6/2007	BOT07-06	648	644	0	99.38	0.62
6	SAT2/BOT/8/2008	BOT08-08	648	644	0	99.38	0.62
7	SAT2/BOT/6/2008	BOT08-06	648	643	0	99.23	0.77
8	SAT2/BOT/11/2008	BOT08-11	648	642	0	99.07	0.93
9	SAT2/BOT/7/2008	BOT08-07	648	642	0	99.07	0.93
10	SAT2/BOT/P3/98 (buff 7)	BOW98-04	352	311	19	88.35	11.65

#### Relationships to Reference Virus Strains

Pos.	Virus name	Filename	No. nt compared	No. nt matched	No. of ambiguities	% Identity	% Difference
1	SAT2/RHO/1/48 [AJ251475]	ZAM48A01	648	530	0	81.79	18.21
2	SAT2/K183/74 (Kenya)	KEN74183	648	502	0	77.47	22.53
3	SAT2/K52/84 (Kenya)	KEN84K52	648	502	0	77.47	22.53
4	SAT2/SA/106/59 (AY593848)	RSA59--A	648	502	0	77.47	22.53
5	SAT2/ZIM/7/83 [AF136607]	ZIM83A07	648	482	0	74.38	25.62
6	SAT2/GHA/2/90 (AF479415)	GHA90A02	648	474	0	73.15	26.85
7	SAT2/KEN/3/57	KEN57-03	648	463	0	71.45	28.55
8	SAT2/ANG/4/74 [AF479417]	ANG74-04	648	460	0	70.99	29.01
9	SAT2/SAU/6/2000 [AF367135]	SAU00A06	647	457	1	70.63	29.37
10	SAT2/GAM/8/79 [AF479410]	GAM79-08	648	454	0	70.06	29.94

nt, nucleotides

\*, not a WRLFMD reference number

Serotype: SAT2	Report date: 24/04/2008						
WRL Ref No: BOT/10/2008							
Sender Ref: BOT 13/08							
Date collected: 2008							
Date received by WRLFMD: 10/04/2008	Topotype: none defined						
Date received for sequencing: 16/04/2008	Genotype/strain: none designated						
Species: Cattle	Sequence filename: BOT08-10.SEQ						
Material used: BTy1	Date sequence last updated: 22/04/2008						
Region sequenced: VP1	Total no. of comparisons: 392						
RT-PCR primers: SAT2-1C445F/SAT-2B208R; SAT2-P1-1223F/SAT-2B208R	Min. no. of nt for comparison: 300						
No. of Nt determined: 648	Total turn-around time: 14 days						
No. of ambiguities: 0	Sequencing time: 8 days						
Gene length: 648							
Comments:							
<b>Ten Most Closely Related Viruses</b>							
Pos.	Virus name	Filename	No. nt compared	No. nt matched	No. of ambiguities	% Identity	% Difference
1	SAT2/BOT/8/2008	BOT08-08	648	647	0	99.85	0.15
2	SAT2/BOT/2/2007	BOT07-02	648	646	0	99.69	0.31
3	SAT2/BOT/3/2007	BOT07-03	648	646	0	99.69	0.31
4	SAT2/BOT/5/2007	BOT07-05	648	646	0	99.69	0.31
5	SAT2/BOT/6/2008	BOT08-06	648	646	0	99.69	0.31
6	SAT2/BOT/6/2007	BOT07-06	648	645	0	99.54	0.46
7	SAT2/BOT/9/2008	BOT08-09	648	645	0	99.54	0.46
8	SAT2/BOT/11/2008	BOT08-11	648	643	0	99.23	0.77
9	SAT2/BOT/7/2008	BOT08-07	648	643	0	99.23	0.77
10	SAT2/BOT/P3/98 (buff 7)	BOW98-04	352	310	19	88.07	11.93
<b>Relationships to Reference Virus Strains</b>							
Pos.	Virus name	Filename	No. nt compared	No. nt matched	No. of ambiguities	% Identity	% Difference
1	SAT2/RHO/1/48 [AJ251475]	ZAM48A01	648	530	0	81.79	18.21
2	SAT2/K183/74 (Kenya)	KEN74183	648	502	0	77.47	22.53
3	SAT2/K52/84 (Kenya)	KEN84K52	648	502	0	77.47	22.53
4	SAT2/SA/106/59 (AY593848)	RSA59-A	648	501	0	77.31	22.69
5	SAT2/ZIM/7/83 [AF136607]	ZIM83A07	648	482	0	74.38	25.62
6	SAT2/GHA/2/90 (AF479415)	GHA90A02	648	474	0	73.15	26.85
7	SAT2/KEN/3/57	KEN57-03	648	463	0	71.45	28.55
8	SAT2/ANG/4/74 [AF479417]	ANG74-04	648	460	0	70.99	29.01
9	SAT2/SAU/6/2000 [AF367135]	SAU00A06	647	456	1	70.48	29.52
10	SAT2/GAM/8/79 [AF479410]	GAM79-08	648	454	0	70.06	29.94
nt, nucleotides							
*, not a WRLFMD reference number							

Serotype: SAT2	Report date: 24/04/2008
WRL RefNo: BOT/11/2008	
Sender Ref: BOT 14/08	
Date collected: 2008	
Date received by WRLFMD: 10/04/2008	Topotype: none defined
Date received for sequencing: 16/04/2008	Genotype/strain: none designated
Species: Cattle	Sequence filename: BOT08-11.SEQ
Material used: BTy1	Date sequence last updated: 22/04/2008
Region sequenced: VP1	Total no. of comparisons: 392
RT-PCR primers: SAT2-1C445F/SAT-2B208R; SAT2-P1-1223F/SAT-2B208R	Min. no. of nt for comparison: 300
No. of Nt determined: 648	Total turn-around time: 14 days
No. of ambiguities: 0	Sequencing time: 8 days
Gene length: 648	

Comments:

### Ten Most Closely Related Viruses

Pos.	Virus name	Filename	No. nt compared	No. nt matched	No. of ambiguities	% Identity	% Difference
1	SAT2/BOT/7/2008	BOT08-07	648	648	0	100	0
2	SAT2/BOT/2/2007	BOT07-02	648	645	0	99.54	0.46
3	SAT2/BOT/3/2007	BOT07-03	648	645	0	99.54	0.46
4	SAT2/BOT/5/2007	BOT07-05	648	645	0	99.54	0.46
5	SAT2/BOT/6/2007	BOT07-06	648	644	0	99.38	0.62
6	SAT2/BOT/10/2008	BOT08-10	648	643	0	99.23	0.77
7	SAT2/BOT/8/2008	BOT08-08	648	642	0	99.07	0.93
8	SAT2/BOT/9/2008	BOT08-09	648	642	0	99.07	0.93
9	SAT2/BOT/6/2008	BOT08-06	648	641	0	98.92	1.08
10	SAT2/BOT/P3/98 (buff 7)	BOW98-04	352	311	19	88.35	11.65

### Relationships to Reference Virus Strains

Pos.	Virus name	Filename	No. nt compared	No. nt matched	No. of ambiguities	% Identity	% Difference
1	SAT2/RHO/1/48 [AJ251475]	ZAM48A01	648	531	0	81.94	18.06
2	SAT2/K183/74 (Kenya)	KEN74183	648	503	0	77.62	22.38
3	SAT2/K52/84 (Kenya)	KEN84K52	648	501	0	77.31	22.69
4	SAT2/SA/106/59 (AY593848)	RSA59--A	648	500	0	77.16	22.84
5	SAT2/ZIM/7/83 [AF136607]	ZIM83A07	648	485	0	74.85	25.15
6	SAT2/GHA/2/90 (AF479415)	GHA90A02	648	474	0	73.15	26.85
7	SAT2/KEN/3/57	KEN57-03	648	464	0	71.6	28.4
8	SAT2/ANG/4/74 [AF479417]	ANG74-04	648	460	0	70.99	29.01
9	SAT2/SAU/6/2000 [AF367135]	SAU00A06	647	459	1	70.94	29.06
10	SAT2/GAM/8/79 [AF479410]	GAM79-08	648	454	0	70.06	29.94

nt, nucleotides

\*, not a WRLFMD reference number

# Report on FMDV SAT2 in Botswana in 2008

No. of Taxa : 153

Data File : n:\levd\meg\db\fmdv\sat2\BOT2008a.meg

Data Title : SAT2 Botswana 2008

Data Type : Nucleotide (Coding)

Analysis : Phylogeny reconstruction

Tree Inference : =====

->Method : Neighbor-Joining

->Phylogeny Test and options : Bootstrap (1000 replicates; seed=64238)

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 : 648

No Of Bootstrap Reps = 1000

Only bootstrap values of 70% and above are shown

\*, not a WRLFMD reference number

N.J. Knowles, J. Wadsworth & K. Ebert, 24 April 2008

