

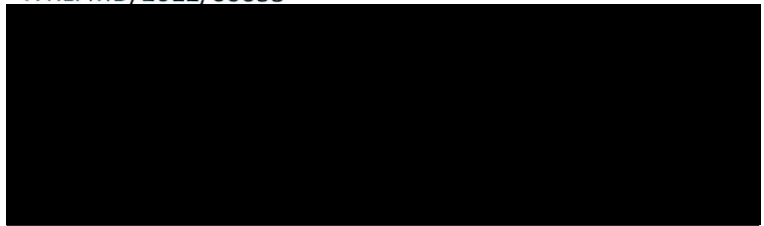


**INSTITUTE FOR ANIMAL HEALTH**  
Director: Professor John Fazakerley BSc, MBA, PhD, FRCPath  
PIRBRIGHT LABORATORY  
Ash Road,  
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## **FMD Genotyping Report**

Lab Reference WRL Batch Number: WRLFMD/2012/00035

Sender Details:



Date Received: 28<sup>th</sup> September 2012

Country of Origin: BOTSWANA

Date Reported: 18<sup>TH</sup> December 2012

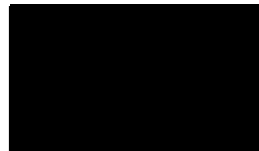
Dear Dr Thobokwe,

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/>

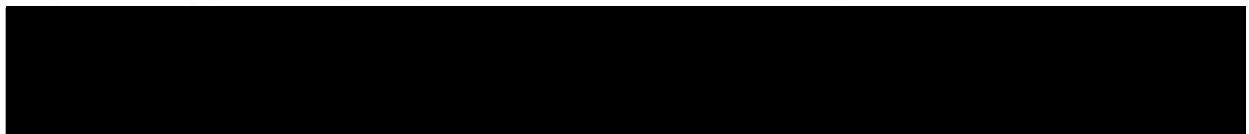
Results Approved By:



Official Stamp:



Date:



A UKAS accredited testing laboratory No. 4025.

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: [trish.ryder@p.ac.uk](mailto:trish.ryder@p.ac.uk). IAH actively seeks and appreciates feedback, if you would like to offer feedback please complete the WRLFMD survey here: <http://www.surveymonkey.com/s/WRLFMD>

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

## Genotyping Report

Report Date for this Batch: 18 December 2012

FMDV type SAT 2  
Country: Botswana  
Period: 2012  
No. of samples: 21

BATCH: WRLFMD/2012/00035



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# FAO World Reference Laboratory for FMD Genotyping Report

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

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Serotype: SAT2	Report date: 18/12/2012
WRLFMD Ref No: BOT/1/2012	Reported by: N.J. Knowles
Batch No: WRLFMD/2012/00035	Checked by: D.P. King
Sender Ref: BOT 01/12	
Location: Matsebe Crush, Maun, Zone 2, Botswana	Topotype: III
Date collected: 25/05/2012	Genotype/strain: unnamed
Date received by WRLFMD: 28/09/2012	Sequence filename: BOT12-01.SEQ
Date received for sequencing: 03/12/2012	Date sequence last updated: 13/12/2012
Species: Bovine	No. of Nt determined: 648
Material used: BTY1 27/11/2012	No. of ambiguities: 0
Region sequenced: VP1	Gene length: 648
RT-PCR primers: SAT2-1C445F/SAT-2B208R	Total no. of comparisons: 608
SAT2-P1-1223F/SAT-2B208R	Min. no. of nt for comparison: 600
	Total turn-around time: 81 days
	Sequencing time: 15 days
Comments:	

<b>Most Closely Related Viruses</b>									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	SAT2/BOT/5/2012	BOT12-05	648	647	0	99.85	0.15	III	unnamed
2	SAT2/BOT/7/2012	BOT12A07	648	647	0	99.85	0.15	III	unnamed
3	SAT2/BOT/2/2012	BOT12-02	648	646	0	99.69	0.31	III	unnamed
4	SAT2/BOT/p11/2012* (BVI)	BOT12-AG	630	626	2	99.37	0.63	III	unnamed
5	SAT2/BOT/p52/2012* (BVI)	BOT12-AH	632	628	0	99.37	0.63	III	unnamed
6	SAT2/BOT/19/2012	BOT12-19	648	643	0	99.23	0.77	III	unnamed
7	SAT2/BOT/20/2012	BOT12-20	648	643	0	99.23	0.77	III	unnamed
8	SAT2/BOT/21/2012	BOT12-21	648	643	0	99.23	0.77	III	unnamed
9	SAT2/BOT/3/2012	BOT12-03	648	643	0	99.23	0.77	III	unnamed
10	SAT2/BOT/4/2012	BOT12-04	648	643	0	99.23	0.77	III	unnamed
<b>Most Closely Related Reference Viruses</b>									
(see <a href="http://www.wrlfmd.org/fmd_genotyping/prototypes.htm">http://www.wrlfmd.org/fmd_genotyping/prototypes.htm</a> )									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	SAT2/BOT/P3/98 (buffalo 29) (AF367124)	BOT98-AC	647	563	1	87.02	12.98	III	unnamed
2	SAT2/RHO/1/48 (AY593847)	ZAM48B01	648	529	0	81.64	18.36	III	unnamed
3	SAT2/MAL/1/2003	MAL03-01	648	509	0	78.55	21.45	I	unnamed
4	SAT2/ETH/1/90 (1989)(AY343935)	ETH90-AA	648	508	0	78.40	21.60	IV	unnamed
5	SAT2/KEN/1/84 (K7/84) (AY344505)	KEN84-AB	648	508	0	78.40	21.60	IV	unnamed
6	SAT2/ZIM/14/2002	ZIM02-14	648	508	0	78.40	21.60	I	unnamed
7	SAT2/SA/106/59 (AY593848)	RSA59--A	648	505	0	77.93	22.07	I	unnamed
8	SAT2/ZIM/7/83 (AF136607)	ZIM83A07	648	489	0	75.46	24.54	II	unnamed
9	SAT2/NIG/2/75 (AF367139)	NIG75-02	648	487	0	75.15	24.85	V	unnamed
10	SAT2/GHA/2/90 (AF479415)	GHA90A02	648	481	0	74.23	25.77	V	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: SAT2	Report date: 18/12/2012
WRLFMD Ref No: BOT/2/2012	Reported by: N.J. Knowles
Batch No: WRLFMD/2012/00035	Checked by: D.P. King
Sender Ref: BOT 02/12	
Location: Matsebe Crush, Maun, Zone 2, Botswana	Topotype: III
Date collected: 25/05/2012	Genotype/strain: unnamed
Date received by WRLFMD: 28/09/2012	Sequence filename: BOT12-02.SEQ
Date received for sequencing: 03/12/2012	Date sequence last updated: 06/12/2012
Species: Bovine	No. of Nt determined: 648
Material used: BTY1 27/11/2012	No. of ambiguities: 0
Region sequenced: VP1	Gene length: 648
RT-PCR primers: SAT2-1C445F/SAT-2B208R	Total no. of comparisons: 608
SAT2-P1-1223F/SAT-2B208R	Min. no. of nt for comparison: 600
	Total turn-around time: 81 days
	Sequencing time: 15 days
Comments:	

<b>Most Closely Related Viruses</b>									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	SAT2/BOT/1/2012	BOT12-01	648	646	0	99.69	0.31	III	unnamed
2	SAT2/BOT/5/2012	BOT12-05	648	645	0	99.54	0.46	III	unnamed
3	SAT2/BOT/7/2012	BOT12A07	648	645	0	99.54	0.46	III	unnamed
4	SAT2/BOT/p11/2012* (BVI)	BOT12-AG	630	626	2	99.37	0.63	III	unnamed
5	SAT2/BOT/p52/2012* (BVI)	BOT12-AH	632	628	0	99.37	0.63	III	unnamed
6	SAT2/BOT/19/2012	BOT12-19	648	643	0	99.23	0.77	III	unnamed
7	SAT2/BOT/20/2012	BOT12-20	648	643	0	99.23	0.77	III	unnamed
8	SAT2/BOT/21/2012	BOT12-21	648	643	0	99.23	0.77	III	unnamed
9	SAT2/BOT/3/2012	BOT12-03	648	643	0	99.23	0.77	III	unnamed
10	SAT2/BOT/4/2012	BOT12-04	648	643	0	99.23	0.77	III	unnamed
<b>Most Closely Related Reference Viruses</b>									
(see <a href="http://www.wrlfmd.org/fmd_genotyping/prototypes.htm">http://www.wrlfmd.org/fmd_genotyping/prototypes.htm</a> )									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	SAT2/BOT/P3/98 (buffalo 29) (AF367124)	BOT98-AC	647	561	1	86.71	13.29	III	unnamed
2	SAT2/RHO/1/48 (AY593847)	ZAM48B01	648	528	0	81.48	18.52	III	unnamed
3	SAT2/KEN/1/84 (K7/84) (AY344505)	KEN84-AB	648	510	0	78.70	21.30	IV	unnamed
4	SAT2/ZIM/14/2002	ZIM02-14	648	510	0	78.70	21.30	I	unnamed
5	SAT2/ETH/1/90 (1989)(AY343935)	ETH90-AA	648	508	0	78.40	21.60	IV	unnamed
6	SAT2/MAL/1/2003	MAL03-01	648	508	0	78.40	21.60	I	unnamed
7	SAT2/SA/106/59 (AY593848)	RSA59--A	648	503	0	77.62	22.38	I	unnamed
8	SAT2/NIG/2/75 (AF367139)	NIG75-02	648	489	0	75.46	24.54	V	unnamed
9	SAT2/ZIM/7/83 (AF136607)	ZIM83A07	648	489	0	75.46	24.54	II	unnamed
10	SAT2/GHA/2/90 (AF479415)	GHA90A02	648	483	0	74.54	25.46	V	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: SAT2	Report date: 18/12/2012
WRLFMD Ref No: BOT/3/2012	Reported by: N.J. Knowles
Batch No: WRLFMD/2012/00035	Checked by: D.P. King
Sender Ref: BOT 03/12	
Location: Matsebe Crush, Maun, Zone 2, Botswana	Topotype: III
Date collected: 24/06/2012	Genotype/strain: unnamed
Date received by WRLFMD: 28/09/2012	Sequence filename: BOT12-03.SEQ
Date received for sequencing: 03/12/2012	Date sequence last updated: 06/12/2012
Species: Bovine	No. of Nt determined: 648
Material used: BTY1 27/11/2012	No. of ambiguities: 0
Region sequenced: VP1	Gene length: 648
RT-PCR primers: SAT2-1C445F/SAT-2B208R	Total no. of comparisons: 608
SAT2-P1-1223F/SAT-2B208R	Min. no. of nt for comparison: 600
	Total turn-around time: 81 days
	Sequencing time: 15 days
Comments:	

<b>Most Closely Related Viruses</b>									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	SAT2/BOT/4/2012	BOT12-04	648	648	0	100.00	0.00	III	unnamed
2	SAT2/BOT/p08/2012* (BVI)	BOT12-AF	629	629	0	100.00	0.00	III	unnamed
3	SAT2/BOT/6/2012	BOT12A06	648	647	0	99.85	0.15	III	unnamed
4	SAT2/BOT/1/2012	BOT12-01	648	643	0	99.23	0.77	III	unnamed
5	SAT2/BOT/2/2012	BOT12-02	648	643	0	99.23	0.77	III	unnamed
6	SAT2/BOT/p11/2012* (BVI)	BOT12-AG	630	625	2	99.21	0.79	III	unnamed
7	SAT2/BOT/p52/2012* (BVI)	BOT12-AH	632	627	0	99.21	0.79	III	unnamed
8	SAT2/BOT/19/2012	BOT12-19	648	642	0	99.07	0.93	III	unnamed
9	SAT2/BOT/20/2012	BOT12-20	648	642	0	99.07	0.93	III	unnamed
10	SAT2/BOT/21/2012	BOT12-21	648	642	0	99.07	0.93	III	unnamed
<b>Most Closely Related Reference Viruses</b>									
(see <a href="http://www.wrlfmd.org/fmd_genotyping/prototypes.htm">http://www.wrlfmd.org/fmd_genotyping/prototypes.htm</a> )									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	SAT2/BOT/P3/98 (buffalo 29) (AF367124)	BOT98-AC	647	562	1	86.86	13.14	III	unnamed
2	SAT2/RHO/1/48 (AY593847)	ZAM48B01	648	527	0	81.33	18.67	III	unnamed
3	SAT2/KEN/1/84 (K7/84) (AY344505)	KEN84-AB	648	510	0	78.70	21.30	IV	unnamed
4	SAT2/MAL/1/2003	MAL03-01	648	508	0	78.40	21.60	I	unnamed
5	SAT2/ZIM/14/2002	ZIM02-14	648	508	0	78.40	21.60	I	unnamed
6	SAT2/ETH/1/90 (1989)(AY343935)	ETH90-AA	648	507	0	78.24	21.76	IV	unnamed
7	SAT2/SA/106/59 (AY593848)	RSA59--A	648	505	0	77.93	22.07	I	unnamed
8	SAT2/ZIM/7/83 (AF136607)	ZIM83A07	648	492	0	75.93	24.07	II	unnamed
9	SAT2/NIG/2/75 (AF367139)	NIG75-02	648	487	0	75.15	24.85	V	unnamed
10	SAT2/GHA/2/90 (AF479415)	GHA90A02	648	482	0	74.38	25.62	V	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: SAT2	Report date: 18/12/2012
WRLFMD Ref No: BOT/4/2012	Reported by: N.J. Knowles
Batch No: WRLFMD/2012/00035	Checked by: D.P. King
Sender Ref: Bot 04/12	
Location: Matsebe Crush, Maun, Zone 2, Botswana	Topotype: III
Date collected: 24/06/2012	Genotype/strain: unnamed
Date received by WRLFMD: 28/09/2012	Sequence filename: BOT12-04.SEQ
Date received for sequencing: 03/12/2012	Date sequence last updated: 06/12/2012
Species: Bovine	No. of Nt determined: 648
Material used: BTY1 27/11/2012	No. of ambiguities: 0
Region sequenced: VP1	Gene length: 648
RT-PCR primers: SAT2-1C445F/SAT-2B208R	Total no. of comparisons: 608
SAT2-P1-1223F/SAT-2B208R	Min. no. of nt for comparison: 600
	Total turn-around time: 81 days
	Sequencing time: 15 days
Comments:	

<b>Most Closely Related Viruses</b>									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	SAT2/BOT/3/2012	BOT12-03	648	648	0	100.00	0.00	III	unnamed
2	SAT2/BOT/p08/2012* (BVI)	BOT12-AF	629	629	0	100.00	0.00	III	unnamed
3	SAT2/BOT/6/2012	BOT12A06	648	647	0	99.85	0.15	III	unnamed
4	SAT2/BOT/1/2012	BOT12-01	648	643	0	99.23	0.77	III	unnamed
5	SAT2/BOT/2/2012	BOT12-02	648	643	0	99.23	0.77	III	unnamed
6	SAT2/BOT/p11/2012* (BVI)	BOT12-AG	630	625	2	99.21	0.79	III	unnamed
7	SAT2/BOT/p52/2012* (BVI)	BOT12-AH	632	627	0	99.21	0.79	III	unnamed
8	SAT2/BOT/19/2012	BOT12-19	648	642	0	99.07	0.93	III	unnamed
9	SAT2/BOT/20/2012	BOT12-20	648	642	0	99.07	0.93	III	unnamed
10	SAT2/BOT/21/2012	BOT12-21	648	642	0	99.07	0.93	III	unnamed
<b>Most Closely Related Reference Viruses</b>									
(see <a href="http://www.wrlfmd.org/fmd_genotyping/prototypes.htm">http://www.wrlfmd.org/fmd_genotyping/prototypes.htm</a> )									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	SAT2/BOT/P3/98 (buffalo 29) (AF367124)	BOT98-AC	647	562	1	86.86	13.14	III	unnamed
2	SAT2/RHO/1/48 (AY593847)	ZAM48B01	648	527	0	81.33	18.67	III	unnamed
3	SAT2/KEN/1/84 (K7/84) (AY344505)	KEN84-AB	648	510	0	78.70	21.30	IV	unnamed
4	SAT2/MAL/1/2003	MAL03-01	648	508	0	78.40	21.60	I	unnamed
5	SAT2/ZIM/14/2002	ZIM02-14	648	508	0	78.40	21.60	I	unnamed
6	SAT2/ETH/1/90 (1989)(AY343935)	ETH90-AA	648	507	0	78.24	21.76	IV	unnamed
7	SAT2/SA/106/59 (AY593848)	RSA59--A	648	505	0	77.93	22.07	I	unnamed
8	SAT2/ZIM/7/83 (AF136607)	ZIM83A07	648	492	0	75.93	24.07	II	unnamed
9	SAT2/NIG/2/75 (AF367139)	NIG75-02	648	487	0	75.15	24.85	V	unnamed
10	SAT2/GHA/2/90 (AF479415)	GHA90A02	648	482	0	74.38	25.62	V	unnamed

nt, nucleotides

\*, not a WRLFMD reference number

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# FAO World Reference Laboratory for FMD Genotyping Report

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

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Serotype: SAT2	Report date: 18/12/2012
WRLFMD Ref No: BOT/5/2012	Reported by: N.J. Knowles
Batch No: WRLFMD/2012/00035	Checked by: D.P. King
Sender Ref: Bot 05/12	
Location: Matsebe Crush, Maun, Zone 2, Botswana	Topotype: III
Date collected: 24/06/2012	Genotype/strain: unnamed
Date received by WRLFMD: 28/09/2012	Sequence filename: BOT12-05.SEQ
Date received for sequencing: 03/12/2012	Date sequence last updated: 06/12/2012
Species: Bovine	No. of Nt determined: 648
Material used: BTY1 28/11/2012	No. of ambiguities: 0
Region sequenced: VP1	Gene length: 648
RT-PCR primers: SAT2-1C445F/SAT-2B208R	Total no. of comparisons: 608
SAT2-P1-1223F/SAT-2B208R	Min. no. of nt for comparison: 600
	Total turn-around time: 81 days
	Sequencing time: 15 days
Comments:	

<b>Most Closely Related Viruses</b>									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	SAT2/BOT/7/2012	BOT12A07	648	648	0	100.00	0.00	III	unnamed
2	SAT2/BOT/1/2012	BOT12-01	648	647	0	99.85	0.15	III	unnamed
3	SAT2/BOT/2/2012	BOT12-02	648	645	0	99.54	0.46	III	unnamed
4	SAT2/BOT/p11/2012* (BVI)	BOT12-AG	630	625	2	99.21	0.79	III	unnamed
5	SAT2/BOT/p52/2012* (BVI)	BOT12-AH	632	627	0	99.21	0.79	III	unnamed
6	SAT2/BOT/19/2012	BOT12-19	648	642	0	99.07	0.93	III	unnamed
7	SAT2/BOT/20/2012	BOT12-20	648	642	0	99.07	0.93	III	unnamed
8	SAT2/BOT/21/2012	BOT12-21	648	642	0	99.07	0.93	III	unnamed
9	SAT2/BOT/3/2012	BOT12-03	648	642	0	99.07	0.93	III	unnamed
10	SAT2/BOT/4/2012	BOT12-04	648	642	0	99.07	0.93	III	unnamed
<b>Most Closely Related Reference Viruses</b>									
(see <a href="http://www.wrlfmd.org/fmd_genotyping/prototypes.htm">http://www.wrlfmd.org/fmd_genotyping/prototypes.htm</a> )									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	SAT2/BOT/P3/98 (buffalo 29) (AF367124)	BOT98-AC	647	562	1	86.86	13.14	III	unnamed
2	SAT2/RHO/1/48 (AY593847)	ZAM48B01	648	528	0	81.48	18.52	III	unnamed
3	SAT2/MAL/1/2003	MAL03-01	648	508	0	78.40	21.60	I	unnamed
4	SAT2/ETH/1/90 (1989)(AY343935)	ETH90-AA	648	507	0	78.24	21.76	IV	unnamed
5	SAT2/KEN/1/84 (K7/84) (AY344505)	KEN84-AB	648	507	0	78.24	21.76	IV	unnamed
6	SAT2/ZIM/14/2002	ZIM02-14	648	507	0	78.24	21.76	I	unnamed
7	SAT2/SA/106/59 (AY593848)	RSA59--A	648	504	0	77.78	22.22	I	unnamed
8	SAT2/ZIM/7/83 (AF136607)	ZIM83A07	648	488	0	75.31	24.69	II	unnamed
9	SAT2/NIG/2/75 (AF367139)	NIG75-02	648	486	0	75.00	25.00	V	unnamed
10	SAT2/GHA/2/90 (AF479415)	GHA90A02	648	480	0	74.07	25.93	V	unnamed

nt, nucleotides

\*, not a WRLFMD reference number

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# FAO World Reference Laboratory for FMD Genotyping Report

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

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Serotype: SAT2	Report date: 18/12/2012
WRLFMD Ref No: BOT/6/2012	Reported by: N.J. Knowles
Batch No: WRLFMD/2012/00035	Checked by: D.P. King
Sender Ref: Bot 06/12	
Location: Matsebe Crush, Maun, Zone 2, Botswana	Topotype: III
Date collected: 24/06/2012	Genotype/strain: unnamed
Date received by WRLFMD: 28/09/2012	Sequence filename: BOT12A06.SEQ
Date received for sequencing: 12/12/2012	Date sequence last updated: 17/12/2012
Species: Bovine	No. of Nt determined: 648
Material used: BTY1 29/11/2012	No. of ambiguities: 0
Region sequenced: VP1	Gene length: 648
RT-PCR primers: SAT2-1C445F/SAT-2B208R	Total no. of comparisons: 608
SAT2-P1-1223F/SAT-2B208R	Min. no. of nt for comparison: 600
	Total turn-around time: 81 days
	Sequencing time: 6 days
<b>Comments:</b>	

<b>Most Closely Related Viruses</b>									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	SAT2/BOT/3/2012	BOT12-03	648	647	0	99.85	0.15	III	unnamed
2	SAT2/BOT/4/2012	BOT12-04	648	647	0	99.85	0.15	III	unnamed
3	SAT2/BOT/p08/2012* (BVI)	BOT12-AF	629	628	0	99.84	0.16	III	unnamed
4	SAT2/BOT/1/2012	BOT12-01	648	642	0	99.07	0.93	III	unnamed
5	SAT2/BOT/2/2012	BOT12-02	648	642	0	99.07	0.93	III	unnamed
6	SAT2/BOT/p11/2012* (BVI)	BOT12-AG	630	624	2	99.05	0.95	III	unnamed
7	SAT2/BOT/p52/2012* (BVI)	BOT12-AH	632	626	0	99.05	0.95	III	unnamed
8	SAT2/BOT/19/2012	BOT12-19	648	641	0	98.92	1.08	III	unnamed
9	SAT2/BOT/20/2012	BOT12-20	648	641	0	98.92	1.08	III	unnamed
10	SAT2/BOT/21/2012	BOT12-21	648	641	0	98.92	1.08	III	unnamed
<b>Most Closely Related Reference Viruses</b>									
(see <a href="http://www.wrlfmd.org/fmd_genotyping/prototypes.htm">http://www.wrlfmd.org/fmd_genotyping/prototypes.htm</a> )									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	SAT2/BOT/P3/98 (buffalo 29) (AF367124)	BOT98-AC	647	561	1	86.71	13.29	III	unnamed
2	SAT2/RHO/1/48 (AY593847)	ZAM48B01	648	527	0	81.33	18.67	III	unnamed
3	SAT2/KEN/1/84 (K7/84) (AY344505)	KEN84-AB	648	511	0	78.86	21.14	IV	unnamed
4	SAT2/MAL/1/2003	MAL03-01	648	509	0	78.55	21.45	I	unnamed
5	SAT2/ETH/1/90 (1989)(AY343935)	ETH90-AA	648	508	0	78.40	21.60	IV	unnamed
6	SAT2/ZIM/14/2002	ZIM02-14	648	508	0	78.40	21.60	I	unnamed
7	SAT2/SA/106/59 (AY593848)	RSA59--A	648	505	0	77.93	22.07	I	unnamed
8	SAT2/ZIM/7/83 (AF136607)	ZIM83A07	648	491	0	75.77	24.23	II	unnamed
9	SAT2/NIG/2/75 (AF367139)	NIG75-02	648	486	0	75.00	25.00	V	unnamed
10	SAT2/GHA/2/90 (AF479415)	GHA90A02	648	481	0	74.23	25.77	V	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: SAT2	Report date: 18/12/2012
WRLFMD Ref No: BOT/7/2012	Reported by: N.J. Knowles
Batch No: WRLFMD/2012/00035	Checked by: D.P. King
Sender Ref: Bot 07/12	
Location: Matsebe Crush, Maun, Zone 2, Botswana	Topotype: III
Date collected: 24/06/2012	Genotype/strain: unnamed
Date received by WRLFMD: 28/09/2012	Sequence filename: BOT12A07.SEQ
Date received for sequencing: 03/12/2012	Date sequence last updated: 13/12/2012
Species: Bovine	No. of Nt determined: 648
Material used: BTY1 29/11/2012	No. of ambiguities: 0
Region sequenced: VP1	Gene length: 648
RT-PCR primers: SAT2-1C445F/SAT-2B208R	Total no. of comparisons: 608
SAT2-P1-1223F/SAT-2B208R	Min. no. of nt for comparison: 600
	Total turn-around time: 81 days
	Sequencing time: 15 days
Comments:	

<b>Most Closely Related Viruses</b>									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	SAT2/BOT/5/2012	BOT12-05	648	648	0	100.00	0.00	III	unnamed
2	SAT2/BOT/1/2012	BOT12-01	648	647	0	99.85	0.15	III	unnamed
3	SAT2/BOT/2/2012	BOT12-02	648	645	0	99.54	0.46	III	unnamed
4	SAT2/BOT/p11/2012* (BVI)	BOT12-AG	630	625	2	99.21	0.79	III	unnamed
5	SAT2/BOT/p52/2012* (BVI)	BOT12-AH	632	627	0	99.21	0.79	III	unnamed
6	SAT2/BOT/19/2012	BOT12-19	648	642	0	99.07	0.93	III	unnamed
7	SAT2/BOT/20/2012	BOT12-20	648	642	0	99.07	0.93	III	unnamed
8	SAT2/BOT/21/2012	BOT12-21	648	642	0	99.07	0.93	III	unnamed
9	SAT2/BOT/3/2012	BOT12-03	648	642	0	99.07	0.93	III	unnamed
10	SAT2/BOT/4/2012	BOT12-04	648	642	0	99.07	0.93	III	unnamed
<b>Most Closely Related Reference Viruses</b>									
(see <a href="http://www.wrlfmd.org/fmd_genotyping/prototypes.htm">http://www.wrlfmd.org/fmd_genotyping/prototypes.htm</a> )									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	SAT2/BOT/P3/98 (buffalo 29) (AF367124)	BOT98-AC	647	562	1	86.86	13.14	III	unnamed
2	SAT2/RHO/1/48 (AY593847)	ZAM48B01	648	528	0	81.48	18.52	III	unnamed
3	SAT2/MAL/1/2003	MAL03-01	648	508	0	78.40	21.60	I	unnamed
4	SAT2/ETH/1/90 (1989)(AY343935)	ETH90-AA	648	507	0	78.24	21.76	IV	unnamed
5	SAT2/KEN/1/84 (K7/84) (AY344505)	KEN84-AB	648	507	0	78.24	21.76	IV	unnamed
6	SAT2/ZIM/14/2002	ZIM02-14	648	507	0	78.24	21.76	I	unnamed
7	SAT2/SA/106/59 (AY593848)	RSA59--A	648	504	0	77.78	22.22	I	unnamed
8	SAT2/ZIM/7/83 (AF136607)	ZIM83A07	648	488	0	75.31	24.69	II	unnamed
9	SAT2/NIG/2/75 (AF367139)	NIG75-02	648	486	0	75.00	25.00	V	unnamed
10	SAT2/GHA/2/90 (AF479415)	GHA90A02	648	480	0	74.07	25.93	V	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: SAT2 WRLFMD Ref No: BOT/8/2012 Batch No: WRLFMD/2012/00035 Sender Ref: Bot 08/12 Location: Spanplek Crush, Maun, Zone 2, Botswana Date collected: 19/07/2012 Date received by WRLFMD: 28/09/2012 Date received for sequencing: 03/12/2012 Species: Bovine Material used: BTY1 29/11/2012 Region sequenced: VP1 RT-PCR primers: SAT2-1C445F/SAT-2B208R SAT2-P1-1223F/SAT-2B208R	Report date: 18/12/2012 Reported by: N.J. Knowles Checked by: D.P. King Topotype: III Genotype/strain: unnamed Sequence filename: BOT12-08.SEQ Date sequence last updated: 13/12/2012 No. of Nt determined: 648 No. of ambiguities: 0 Gene length: 648 Total no. of comparisons: 608 Min. no. of nt for comparison: 600 Total turn-around time: 81 days Sequencing time: 15 days
Comments:	

Most Closely Related Viruses									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	SAT2/BOT/10/2012	BOT12-10	648	648	0	100.00	0.00	III	unnamed
2	SAT2/BOT/11/2012	BOT12-11	648	648	0	100.00	0.00	III	unnamed
3	SAT2/BOT/12/2012	BOT12-12	648	648	0	100.00	0.00	III	unnamed
4	SAT2/BOT/14/2012	BOT12-14	648	648	0	100.00	0.00	III	unnamed
5	SAT2/BOT/16/2012	BOT12-16	648	648	0	100.00	0.00	III	unnamed
6	SAT2/BOT/17/2012	BOT12-17	648	648	0	100.00	0.00	III	unnamed
7	SAT2/BOT12/12* (BVI)	BOT12-AD	638	638	2	100.00	0.00	III	unnamed
8	SAT2/BOT/13/2012	BOT12-13	648	647	0	99.85	0.15	III	unnamed
9	SAT2/BOT/15/2012	BOT12-15	648	647	0	99.85	0.15	III	unnamed
10	SAT2/BOT/18/2012	BOT12-18	648	647	0	99.85	0.15	III	unnamed
Most Closely Related Reference Viruses									
(see <a href="http://www.wrlfmd.org/fmd_genotyping/prototypes.htm">http://www.wrlfmd.org/fmd_genotyping/prototypes.htm</a> )									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	SAT2/BOT/P3/98 (buffalo 29) (AF367124)	BOT98-AC	647	554	1	85.63	14.37	III	unnamed
2	SAT2/RHO/1/48 (AY593847)	ZAM48B01	648	532	0	82.10	17.90	III	unnamed
3	SAT2/KEN/1/84 (K7/84) (AY344505)	KEN84-AB	648	513	0	79.17	20.83	IV	unnamed
4	SAT2/ETH/1/90 (1989)(AY343935)	ETH90-AA	648	507	0	78.24	21.76	IV	unnamed
5	SAT2/ZIM/14/2002	ZIM02-14	648	503	0	77.62	22.38	I	unnamed
6	SAT2/MAL/1/2003	MAL03-01	648	501	0	77.31	22.69	I	unnamed
7	SAT2/SA/106/59 (AY593848)	RSA59--A	648	500	0	77.16	22.84	I	unnamed
8	SAT2/ZIM/7/83 (AF136607)	ZIM83A07	648	485	0	74.85	25.15	II	unnamed
9	SAT2/ZIM/5/81 (EF134951)	ZIM81-AA	648	481	0	74.23	25.77	II	unnamed
10	SAT2/NIG/2/75 (AF367139)	NIG75-02	648	476	0	73.46	26.54	V	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: SAT2	Report date: 18/12/2012
WRLFMD Ref No: BOT/9/2012	Reported by: N.J. Knowles
Batch No: WRLFMD/2012/00035	Checked by: D.P. King
Sender Ref: Bot 09/12	
Location: Spanplek Crush, Maun, Zone 2, Botswana	Topotype: III
Date collected: 19/07/2012	Genotype/strain: unnamed
Date received by WRLFMD: 28/09/2012	Sequence filename: BOT12-09.SEQ
Date received for sequencing: 03/12/2012	Date sequence last updated: 13/12/2012
Species: Bovine	No. of Nt determined: 648
Material used: BTY1 29/11/2012	No. of ambiguities: 0
Region sequenced: VP1	Gene length: 648
RT-PCR primers: SAT2-1C445F/SAT-2B208R	Total no. of comparisons: 608
SAT2-P1-1223F/SAT-2B208R	Min. no. of nt for comparison: 600
	Total turn-around time: 81 days
	Sequencing time: 15 days
Comments:	

<b>Most Closely Related Viruses</b>									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	SAT2/BOT/10/2012	BOT12-10	648	647	0	99.85	0.15	III	unnamed
2	SAT2/BOT/11/2012	BOT12-11	648	647	0	99.85	0.15	III	unnamed
3	SAT2/BOT/12/2012	BOT12-12	648	647	0	99.85	0.15	III	unnamed
4	SAT2/BOT/14/2012	BOT12-14	648	647	0	99.85	0.15	III	unnamed
5	SAT2/BOT/16/2012	BOT12-16	648	647	0	99.85	0.15	III	unnamed
6	SAT2/BOT/17/2012	BOT12-17	648	647	0	99.85	0.15	III	unnamed
7	SAT2/BOT/8/2012	BOT12-08	648	647	0	99.85	0.15	III	unnamed
8	SAT2/BOT12/12* (BVI)	BOT12-AD	638	637	2	99.84	0.16	III	unnamed
9	SAT2/BOT/13/2012	BOT12-13	648	646	0	99.69	0.31	III	unnamed
10	SAT2/BOT/15/2012	BOT12-15	648	646	0	99.69	0.31	III	unnamed
<b>Most Closely Related Reference Viruses</b>									
(see <a href="http://www.wrlfmd.org/fmd_genotyping/prototypes.htm">http://www.wrlfmd.org/fmd_genotyping/prototypes.htm</a> )									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	SAT2/BOT/P3/98 (buffalo 29) (AF367124)	BOT98-AC	647	554	1	85.63	14.37	III	unnamed
2	SAT2/RHO/1/48 (AY593847)	ZAM48B01	648	531	0	81.94	18.06	III	unnamed
3	SAT2/KEN/1/84 (K7/84) (AY344505)	KEN84-AB	648	512	0	79.01	20.99	IV	unnamed
4	SAT2/ETH/1/90 (1989)(AY343935)	ETH90-AA	648	506	0	78.09	21.91	IV	unnamed
5	SAT2/ZIM/14/2002	ZIM02-14	648	503	0	77.62	22.38	I	unnamed
6	SAT2/MAL/1/2003	MAL03-01	648	500	0	77.16	22.84	I	unnamed
7	SAT2/SA/106/59 (AY593848)	RSA59--A	648	499	0	77.01	22.99	I	unnamed
8	SAT2/ZIM/7/83 (AF136607)	ZIM83A07	648	484	0	74.69	25.31	II	unnamed
9	SAT2/ZIM/5/81 (EF134951)	ZIM81-AA	648	480	0	74.07	25.93	II	unnamed
10	SAT2/GHA/2/90 (AF479415)	GHA90A02	648	475	0	73.30	26.70	V	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: SAT2 WRLFMD Ref No: BOT/10/2012 Batch No: WRLFMD/2012/00035 Sender Ref: Bot 10/12 Location: Spanplek crush, Maun, Zone 2, Botswana Date collected: 19/07/2012 Date received by WRLFMD: 28/09/2012 Date received for sequencing: 12/12/2012 Species: Bovine Material used: BTY1 29/11/2012 Region sequenced: VP1 RT-PCR primers: SAT2-1C445F/SAT-2B208R SAT2-P1-1223F/SAT-2B208R	Report date: 18/12/2012 Reported by: N.J. Knowles Checked by: D.P. King Topotype: III Genotype/strain: unnamed Sequence filename: BOT12-10.SEQ Date sequence last updated: 17/12/2012 No. of Nt determined: 648 No. of ambiguities: 0 Gene length: 648 Total no. of comparisons: 608 Min. no. of nt for comparison: 600 Total turn-around time: 81 days Sequencing time: 6 days
Comments:	

Most Closely Related Viruses									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	SAT2/BOT/11/2012	BOT12-11	648	648	0	100.00	0.00	III	unnamed
2	SAT2/BOT/12/2012	BOT12-12	648	648	0	100.00	0.00	III	unnamed
3	SAT2/BOT/14/2012	BOT12-14	648	648	0	100.00	0.00	III	unnamed
4	SAT2/BOT/16/2012	BOT12-16	648	648	0	100.00	0.00	III	unnamed
5	SAT2/BOT/17/2012	BOT12-17	648	648	0	100.00	0.00	III	unnamed
6	SAT2/BOT/8/2012	BOT12-08	648	648	0	100.00	0.00	III	unnamed
7	SAT2/BOT12/12* (BVI)	BOT12-AD	638	638	2	100.00	0.00	III	unnamed
8	SAT2/BOT/13/2012	BOT12-13	648	647	0	99.85	0.15	III	unnamed
9	SAT2/BOT/15/2012	BOT12-15	648	647	0	99.85	0.15	III	unnamed
10	SAT2/BOT/18/2012	BOT12-18	648	647	0	99.85	0.15	III	unnamed
Most Closely Related Reference Viruses									
(see <a href="http://www.wrlfmd.org/fmd_genotyping/prototypes.htm">http://www.wrlfmd.org/fmd_genotyping/prototypes.htm</a> )									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	SAT2/BOT/P3/98 (buffalo 29) (AF367124)	BOT98-AC	647	554	1	85.63	14.37	III	unnamed
2	SAT2/RHO/1/48 (AY593847)	ZAM48B01	648	532	0	82.10	17.90	III	unnamed
3	SAT2/KEN/1/84 (K7/84) (AY344505)	KEN84-AB	648	513	0	79.17	20.83	IV	unnamed
4	SAT2/ETH/1/90 (1989)(AY343935)	ETH90-AA	648	507	0	78.24	21.76	IV	unnamed
5	SAT2/ZIM/14/2002	ZIM02-14	648	503	0	77.62	22.38	I	unnamed
6	SAT2/MAL/1/2003	MAL03-01	648	501	0	77.31	22.69	I	unnamed
7	SAT2/SA/106/59 (AY593848)	RSA59--A	648	500	0	77.16	22.84	I	unnamed
8	SAT2/ZIM/7/83 (AF136607)	ZIM83A07	648	485	0	74.85	25.15	II	unnamed
9	SAT2/ZIM/5/81 (EF134951)	ZIM81-AA	648	481	0	74.23	25.77	II	unnamed
10	SAT2/NIG/2/75 (AF367139)	NIG75-02	648	476	0	73.46	26.54	V	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: SAT2	Report date: 18/12/2012
WRLFMD Ref No: BOT/11/2012	Reported by: N.J. Knowles
Batch No: WRLFMD/2012/00035	Checked by: D.P. King
Sender Ref: Bot 11/12	
Location: Spanplek Crush, Maun, Zone 2, Botswana	Topotype: III
Date collected: 19/07/2012	Genotype/strain: unnamed
Date received by WRLFMD: 28/09/2012	Sequence filename: BOT12-11.SEQ
Date received for sequencing: 12/12/2012	Date sequence last updated: 17/12/2012
Species: Bovine	No. of Nt determined: 648
Material used: BTY1 30/11/2012	No. of ambiguities: 0
Region sequenced: VP1	Gene length: 648
RT-PCR primers: SAT2-1C445F/SAT-2B208R	Total no. of comparisons: 608
SAT2-P1-1223F/SAT-2B208R	Min. no. of nt for comparison: 600
	Total turn-around time: 81 days
	Sequencing time: 6 days
Comments:	

<b>Most Closely Related Viruses</b>									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	SAT2/BOT/10/2012	BOT12-10	648	648	0	100.00	0.00	III	unnamed
2	SAT2/BOT/12/2012	BOT12-12	648	648	0	100.00	0.00	III	unnamed
3	SAT2/BOT/14/2012	BOT12-14	648	648	0	100.00	0.00	III	unnamed
4	SAT2/BOT/16/2012	BOT12-16	648	648	0	100.00	0.00	III	unnamed
5	SAT2/BOT/17/2012	BOT12-17	648	648	0	100.00	0.00	III	unnamed
6	SAT2/BOT/8/2012	BOT12-08	648	648	0	100.00	0.00	III	unnamed
7	SAT2/BOT12/12* (BVI)	BOT12-AD	638	638	2	100.00	0.00	III	unnamed
8	SAT2/BOT/13/2012	BOT12-13	648	647	0	99.85	0.15	III	unnamed
9	SAT2/BOT/15/2012	BOT12-15	648	647	0	99.85	0.15	III	unnamed
10	SAT2/BOT/18/2012	BOT12-18	648	647	0	99.85	0.15	III	unnamed
<b>Most Closely Related Reference Viruses</b>									
(see <a href="http://www.wrlfmd.org/fmd_genotyping/prototypes.htm">http://www.wrlfmd.org/fmd_genotyping/prototypes.htm</a> )									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	SAT2/BOT/P3/98 (buffalo 29) (AF367124)	BOT98-AC	647	554	1	85.63	14.37	III	unnamed
2	SAT2/RHO/1/48 (AY593847)	ZAM48B01	648	532	0	82.10	17.90	III	unnamed
3	SAT2/KEN/1/84 (K7/84) (AY344505)	KEN84-AB	648	513	0	79.17	20.83	IV	unnamed
4	SAT2/ETH/1/90 (1989)(AY343935)	ETH90-AA	648	507	0	78.24	21.76	IV	unnamed
5	SAT2/ZIM/14/2002	ZIM02-14	648	503	0	77.62	22.38	I	unnamed
6	SAT2/MAL/1/2003	MAL03-01	648	501	0	77.31	22.69	I	unnamed
7	SAT2/SA/106/59 (AY593848)	RSA59--A	648	500	0	77.16	22.84	I	unnamed
8	SAT2/ZIM/7/83 (AF136607)	ZIM83A07	648	485	0	74.85	25.15	II	unnamed
9	SAT2/ZIM/5/81 (EF134951)	ZIM81-AA	648	481	0	74.23	25.77	II	unnamed
10	SAT2/NIG/2/75 (AF367139)	NIG75-02	648	476	0	73.46	26.54	V	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: SAT2	Report date: 18/12/2012
WRLFMD Ref No: BOT/12/2012	Reported by: N.J. Knowles
Batch No: WRLFMD/2012/00035	Checked by: D.P. King
Sender Ref: Bot 12/12	
Location: Spanplek Crush, Maun, Zone 2, Botswana	Topotype: III
Date collected: 19/07/2012	Genotype/strain: unnamed
Date received by WRLFMD: 28/09/2012	Sequence filename: BOT12-12.SEQ
Date received for sequencing: 12/12/2012	Date sequence last updated: 17/12/2012
Species: Bovine	No. of Nt determined: 648
Material used: BTY1 30/11/2012	No. of ambiguities: 0
Region sequenced: VP1	Gene length: 648
RT-PCR primers: SAT2-1C445F/SAT-2B208R	Total no. of comparisons: 608
SAT2-P1-1223F/SAT-2B208R	Min. no. of nt for comparison: 600
	Total turn-around time: 81 days
	Sequencing time: 6 days
Comments:	

<b>Most Closely Related Viruses</b>									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	SAT2/BOT/10/2012	BOT12-10	648	648	0	100.00	0.00	III	unnamed
2	SAT2/BOT/11/2012	BOT12-11	648	648	0	100.00	0.00	III	unnamed
3	SAT2/BOT/14/2012	BOT12-14	648	648	0	100.00	0.00	III	unnamed
4	SAT2/BOT/16/2012	BOT12-16	648	648	0	100.00	0.00	III	unnamed
5	SAT2/BOT/17/2012	BOT12-17	648	648	0	100.00	0.00	III	unnamed
6	SAT2/BOT/8/2012	BOT12-08	648	648	0	100.00	0.00	III	unnamed
7	SAT2/BOT12/12* (BVI)	BOT12-AD	638	638	2	100.00	0.00	III	unnamed
8	SAT2/BOT/13/2012	BOT12-13	648	647	0	99.85	0.15	III	unnamed
9	SAT2/BOT/15/2012	BOT12-15	648	647	0	99.85	0.15	III	unnamed
10	SAT2/BOT/18/2012	BOT12-18	648	647	0	99.85	0.15	III	unnamed
<b>Most Closely Related Reference Viruses</b>									
(see <a href="http://www.wrlfmd.org/fmd_genotyping/prototypes.htm">http://www.wrlfmd.org/fmd_genotyping/prototypes.htm</a> )									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	SAT2/BOT/P3/98 (buffalo 29) (AF367124)	BOT98-AC	647	554	1	85.63	14.37	III	unnamed
2	SAT2/RHO/1/48 (AY593847)	ZAM48B01	648	532	0	82.10	17.90	III	unnamed
3	SAT2/KEN/1/84 (K7/84) (AY344505)	KEN84-AB	648	513	0	79.17	20.83	IV	unnamed
4	SAT2/ETH/1/90 (1989)(AY343935)	ETH90-AA	648	507	0	78.24	21.76	IV	unnamed
5	SAT2/ZIM/14/2002	ZIM02-14	648	503	0	77.62	22.38	I	unnamed
6	SAT2/MAL/1/2003	MAL03-01	648	501	0	77.31	22.69	I	unnamed
7	SAT2/SA/106/59 (AY593848)	RSA59--A	648	500	0	77.16	22.84	I	unnamed
8	SAT2/ZIM/7/83 (AF136607)	ZIM83A07	648	485	0	74.85	25.15	II	unnamed
9	SAT2/ZIM/5/81 (EF134951)	ZIM81-AA	648	481	0	74.23	25.77	II	unnamed
10	SAT2/NIG/2/75 (AF367139)	NIG75-02	648	476	0	73.46	26.54	V	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: SAT2 WRLFMD Ref No: BOT/13/2012 Batch No: WRLFMD/2012/00035 Sender Ref: Bot 13/12 Location: Spanplek Crush, Maun, Zone 2, Botswana Date collected: 19/07/2012 Date received by WRLFMD: 28/09/2012 Date received for sequencing: 12/12/2012 Species: Bovine Material used: BTY1 30/11/2012 Region sequenced: VP1 RT-PCR primers: SAT2-1C445F/SAT-2B208R SAT2-P1-1223F/SAT-2B208R	Report date: 18/12/2012 Reported by: N.J. Knowles Checked by: D.P. King Topotype: III Genotype/strain: unnamed Sequence filename: BOT12-13.SEQ Date sequence last updated: 17/12/2012 No. of Nt determined: 648 No. of ambiguities: 0 Gene length: 648 Total no. of comparisons: 608 Min. no. of nt for comparison: 600 Total turn-around time: 81 days Sequencing time: 6 days
Comments:	

Most Closely Related Viruses									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	SAT2/BOT/15/2012	BOT12-15	648	648	0	100.00	0.00	III	unnamed
2	SAT2/BOT/18/2012	BOT12-18	648	648	0	100.00	0.00	III	unnamed
3	SAT2/BOT14/12* (BVI)	BOT12-AE	646	646	0	100.00	0.00	III	unnamed
4	SAT2/BOT/10/2012	BOT12-10	648	647	0	99.85	0.15	III	unnamed
5	SAT2/BOT/11/2012	BOT12-11	648	647	0	99.85	0.15	III	unnamed
6	SAT2/BOT/12/2012	BOT12-12	648	647	0	99.85	0.15	III	unnamed
7	SAT2/BOT/14/2012	BOT12-14	648	647	0	99.85	0.15	III	unnamed
8	SAT2/BOT/16/2012	BOT12-16	648	647	0	99.85	0.15	III	unnamed
9	SAT2/BOT/17/2012	BOT12-17	648	647	0	99.85	0.15	III	unnamed
10	SAT2/BOT/8/2012	BOT12-08	648	647	0	99.85	0.15	III	unnamed
Most Closely Related Reference Viruses									
(see <a href="http://www.wrlfmd.org/fmd_genotyping/prototypes.htm">http://www.wrlfmd.org/fmd_genotyping/prototypes.htm</a> )									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	SAT2/BOT/P3/98 (buffalo 29) (AF367124)	BOT98-AC	647	553	1	85.47	14.53	III	unnamed
2	SAT2/RHO/1/48 (AY593847)	ZAM48B01	648	531	0	81.94	18.06	III	unnamed
3	SAT2/KEN/1/84 (K7/84) (AY344505)	KEN84-AB	648	512	0	79.01	20.99	IV	unnamed
4	SAT2/ETH/1/90 (1989)(AY343935)	ETH90-AA	648	506	0	78.09	21.91	IV	unnamed
5	SAT2/MAL/1/2003	MAL03-01	648	502	0	77.47	22.53	I	unnamed
6	SAT2/ZIM/14/2002	ZIM02-14	648	502	0	77.47	22.53	I	unnamed
7	SAT2/SA/106/59 (AY593848)	RSA59--A	648	500	0	77.16	22.84	I	unnamed
8	SAT2/ZIM/7/83 (AF136607)	ZIM83A07	648	486	0	75.00	25.00	II	unnamed
9	SAT2/ZIM/5/81 (EF134951)	ZIM81-AA	648	482	0	74.38	25.62	II	unnamed
10	SAT2/NIG/2/75 (AF367139)	NIG75-02	648	477	0	73.61	26.39	V	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: SAT2	Report date: 18/12/2012
WRLFMD Ref No: BOT/14/2012	Reported by: N.J. Knowles
Batch No: WRLFMD/2012/00035	Checked by: D.P. King
Sender Ref: Bot 14/12	
Location: Spanplek Crush, Maun, Zone 2, Botswana	Topotype: III
Date collected: 19/07/2012	Genotype/strain: unnamed
Date received by WRLFMD: 28/09/2012	Sequence filename: BOT12-14.SEQ
Date received for sequencing: 12/12/2012	Date sequence last updated: 17/12/2012
Species: Bovine	No. of Nt determined: 648
Material used: BTY1 30/11/2012	No. of ambiguities: 0
Region sequenced: VP1	Gene length: 648
RT-PCR primers: SAT2-1C445F/SAT-2B208R	Total no. of comparisons: 608
SAT2-P1-1223F/SAT-2B208R	Min. no. of nt for comparison: 600
	Total turn-around time: 81 days
	Sequencing time: 6 days
Comments:	

<b>Most Closely Related Viruses</b>									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	SAT2/BOT/10/2012	BOT12-10	648	648	0	100.00	0.00	III	unnamed
2	SAT2/BOT/11/2012	BOT12-11	648	648	0	100.00	0.00	III	unnamed
3	SAT2/BOT/12/2012	BOT12-12	648	648	0	100.00	0.00	III	unnamed
4	SAT2/BOT/16/2012	BOT12-16	648	648	0	100.00	0.00	III	unnamed
5	SAT2/BOT/17/2012	BOT12-17	648	648	0	100.00	0.00	III	unnamed
6	SAT2/BOT/8/2012	BOT12-08	648	648	0	100.00	0.00	III	unnamed
7	SAT2/BOT12/12* (BVI)	BOT12-AD	638	638	2	100.00	0.00	III	unnamed
8	SAT2/BOT/13/2012	BOT12-13	648	647	0	99.85	0.15	III	unnamed
9	SAT2/BOT/15/2012	BOT12-15	648	647	0	99.85	0.15	III	unnamed
10	SAT2/BOT/18/2012	BOT12-18	648	647	0	99.85	0.15	III	unnamed
<b>Most Closely Related Reference Viruses</b>									
(see <a href="http://www.wrlfmd.org/fmd_genotyping/prototypes.htm">http://www.wrlfmd.org/fmd_genotyping/prototypes.htm</a> )									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	SAT2/BOT/P3/98 (buffalo 29) (AF367124)	BOT98-AC	647	554	1	85.63	14.37	III	unnamed
2	SAT2/RHO/1/48 (AY593847)	ZAM48B01	648	532	0	82.10	17.90	III	unnamed
3	SAT2/KEN/1/84 (K7/84) (AY344505)	KEN84-AB	648	513	0	79.17	20.83	IV	unnamed
4	SAT2/ETH/1/90 (1989)(AY343935)	ETH90-AA	648	507	0	78.24	21.76	IV	unnamed
5	SAT2/ZIM/14/2002	ZIM02-14	648	503	0	77.62	22.38	I	unnamed
6	SAT2/MAL/1/2003	MAL03-01	648	501	0	77.31	22.69	I	unnamed
7	SAT2/SA/106/59 (AY593848)	RSA59--A	648	500	0	77.16	22.84	I	unnamed
8	SAT2/ZIM/7/83 (AF136607)	ZIM83A07	648	485	0	74.85	25.15	II	unnamed
9	SAT2/ZIM/5/81 (EF134951)	ZIM81-AA	648	481	0	74.23	25.77	II	unnamed
10	SAT2/NIG/2/75 (AF367139)	NIG75-02	648	476	0	73.46	26.54	V	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: SAT2	Report date: 18/12/2012
WRLFMD Ref No: BOT/15/2012	Reported by: N.J. Knowles
Batch No: WRLFMD/2012/00035	Checked by: D.P. King
Sender Ref: Bot 15/12	
Location: Spanplek Crush, Maun, Zone 2, Botswana	Topotype: III
Date collected: 19/07/2012	Genotype/strain: unnamed
Date received by WRLFMD: 28/09/2012	Sequence filename: BOT12-15.SEQ
Date received for sequencing: 12/12/2012	Date sequence last updated: 17/12/2012
Species: Bovine	No. of Nt determined: 648
Material used: BTY1 30/11/2012	No. of ambiguities: 0
Region sequenced: VP1	Gene length: 648
RT-PCR primers: SAT2-1C445F/SAT-2B208R	Total no. of comparisons: 608
SAT2-P1-1223F/SAT-2B208R	Min. no. of nt for comparison: 600
	Total turn-around time: 81 days
	Sequencing time: 6 days
Comments:	

<b>Most Closely Related Viruses</b>									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	SAT2/BOT/13/2012	BOT12-13	648	648	0	100.00	0.00	III	unnamed
2	SAT2/BOT/18/2012	BOT12-18	648	648	0	100.00	0.00	III	unnamed
3	SAT2/BOT14/12* (BVI)	BOT12-AE	646	646	0	100.00	0.00	III	unnamed
4	SAT2/BOT/10/2012	BOT12-10	648	647	0	99.85	0.15	III	unnamed
5	SAT2/BOT/11/2012	BOT12-11	648	647	0	99.85	0.15	III	unnamed
6	SAT2/BOT/12/2012	BOT12-12	648	647	0	99.85	0.15	III	unnamed
7	SAT2/BOT/14/2012	BOT12-14	648	647	0	99.85	0.15	III	unnamed
8	SAT2/BOT/16/2012	BOT12-16	648	647	0	99.85	0.15	III	unnamed
9	SAT2/BOT/17/2012	BOT12-17	648	647	0	99.85	0.15	III	unnamed
10	SAT2/BOT/8/2012	BOT12-08	648	647	0	99.85	0.15	III	unnamed
<b>Most Closely Related Reference Viruses</b>									
(see <a href="http://www.wrlfmd.org/fmd_genotyping/prototypes.htm">http://www.wrlfmd.org/fmd_genotyping/prototypes.htm</a> )									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	SAT2/BOT/P3/98 (buffalo 29) (AF367124)	BOT98-AC	647	553	1	85.47	14.53	III	unnamed
2	SAT2/RHO/1/48 (AY593847)	ZAM48B01	648	531	0	81.94	18.06	III	unnamed
3	SAT2/KEN/1/84 (K7/84) (AY344505)	KEN84-AB	648	512	0	79.01	20.99	IV	unnamed
4	SAT2/ETH/1/90 (1989)(AY343935)	ETH90-AA	648	506	0	78.09	21.91	IV	unnamed
5	SAT2/MAL/1/2003	MAL03-01	648	502	0	77.47	22.53	I	unnamed
6	SAT2/ZIM/14/2002	ZIM02-14	648	502	0	77.47	22.53	I	unnamed
7	SAT2/SA/106/59 (AY593848)	RSA59--A	648	500	0	77.16	22.84	I	unnamed
8	SAT2/ZIM/7/83 (AF136607)	ZIM83A07	648	486	0	75.00	25.00	II	unnamed
9	SAT2/ZIM/5/81 (EF134951)	ZIM81-AA	648	482	0	74.38	25.62	II	unnamed
10	SAT2/NIG/2/75 (AF367139)	NIG75-02	648	477	0	73.61	26.39	V	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: SAT2	Report date: 18/12/2012
WRLFMD Ref No: BOT/16/2012	Reported by: N.J. Knowles
Batch No: WRLFMD/2012/00035	Checked by: D.P. King
Sender Ref: Bot 16/12	
Location: Spanplek Crush, Maun, Zone 2, Botswana	Topotype: III
Date collected: 19/07/2012	Genotype/strain: unnamed
Date received by WRLFMD: 28/09/2012	Sequence filename: BOT12-16.SEQ
Date received for sequencing: 12/12/2012	Date sequence last updated: 17/12/2012
Species: Bovine	No. of Nt determined: 648
Material used: BTY1 05/12/2012	No. of ambiguities: 0
Region sequenced: VP1	Gene length: 648
RT-PCR primers: SAT2-1C445F/SAT-2B208R	Total no. of comparisons: 608
SAT2-P1-1223F/SAT-2B208R	Min. no. of nt for comparison: 600
	Total turn-around time: 81 days
	Sequencing time: 6 days
Comments:	

<b>Most Closely Related Viruses</b>									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	SAT2/BOT/10/2012	BOT12-10	648	648	0	100.00	0.00	III	unnamed
2	SAT2/BOT/11/2012	BOT12-11	648	648	0	100.00	0.00	III	unnamed
3	SAT2/BOT/12/2012	BOT12-12	648	648	0	100.00	0.00	III	unnamed
4	SAT2/BOT/14/2012	BOT12-14	648	648	0	100.00	0.00	III	unnamed
5	SAT2/BOT/17/2012	BOT12-17	648	648	0	100.00	0.00	III	unnamed
6	SAT2/BOT/8/2012	BOT12-08	648	648	0	100.00	0.00	III	unnamed
7	SAT2/BOT12/12* (BVI)	BOT12-AD	638	638	2	100.00	0.00	III	unnamed
8	SAT2/BOT/13/2012	BOT12-13	648	647	0	99.85	0.15	III	unnamed
9	SAT2/BOT/15/2012	BOT12-15	648	647	0	99.85	0.15	III	unnamed
10	SAT2/BOT/18/2012	BOT12-18	648	647	0	99.85	0.15	III	unnamed
<b>Most Closely Related Reference Viruses</b>									
(see <a href="http://www.wrlfmd.org/fmd_genotyping/prototypes.htm">http://www.wrlfmd.org/fmd_genotyping/prototypes.htm</a> )									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	SAT2/BOT/P3/98 (buffalo 29) (AF367124)	BOT98-AC	647	554	1	85.63	14.37	III	unnamed
2	SAT2/RHO/1/48 (AY593847)	ZAM48B01	648	532	0	82.10	17.90	III	unnamed
3	SAT2/KEN/1/84 (K7/84) (AY344505)	KEN84-AB	648	513	0	79.17	20.83	IV	unnamed
4	SAT2/ETH/1/90 (1989)(AY343935)	ETH90-AA	648	507	0	78.24	21.76	IV	unnamed
5	SAT2/ZIM/14/2002	ZIM02-14	648	503	0	77.62	22.38	I	unnamed
6	SAT2/MAL/1/2003	MAL03-01	648	501	0	77.31	22.69	I	unnamed
7	SAT2/SA/106/59 (AY593848)	RSA59--A	648	500	0	77.16	22.84	I	unnamed
8	SAT2/ZIM/7/83 (AF136607)	ZIM83A07	648	485	0	74.85	25.15	II	unnamed
9	SAT2/ZIM/5/81 (EF134951)	ZIM81-AA	648	481	0	74.23	25.77	II	unnamed
10	SAT2/NIG/2/75 (AF367139)	NIG75-02	648	476	0	73.46	26.54	V	unnamed

nt, nucleotides

\*, not a WRLFMD reference number

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# FAO World Reference Laboratory for FMD Genotyping Report

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

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Serotype: SAT2	Report date: 18/12/2012
WRLFMD Ref No: BOT/17/2012	Reported by: N.J. Knowles
Batch No: WRLFMD/2012/00035	Checked by: D.P. King
Sender Ref: Bot 17/12	
Location: Spanplek Crush, Maun, Zone 2, Botswana	Topotype: III
Date collected: 19/07/2012	Genotype/strain: unnamed
Date received by WRLFMD: 28/09/2012	Sequence filename: BOT12-17.SEQ
Date received for sequencing: 12/12/2012	Date sequence last updated: 17/12/2012
Species: Bovine	No. of Nt determined: 648
Material used: BTY1 05/12/2012	No. of ambiguities: 0
Region sequenced: VP1	Gene length: 648
RT-PCR primers: SAT2-1C445F/SAT-2B208R	Total no. of comparisons: 608
SAT2-P1-1223F/SAT-2B208R	Min. no. of nt for comparison: 600
	Total turn-around time: 81 days
	Sequencing time: 6 days
Comments:	

<b>Most Closely Related Viruses</b>									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	SAT2/BOT/10/2012	BOT12-10	648	648	0	100.00	0.00	III	unnamed
2	SAT2/BOT/11/2012	BOT12-11	648	648	0	100.00	0.00	III	unnamed
3	SAT2/BOT/12/2012	BOT12-12	648	648	0	100.00	0.00	III	unnamed
4	SAT2/BOT/14/2012	BOT12-14	648	648	0	100.00	0.00	III	unnamed
5	SAT2/BOT/16/2012	BOT12-16	648	648	0	100.00	0.00	III	unnamed
6	SAT2/BOT/8/2012	BOT12-08	648	648	0	100.00	0.00	III	unnamed
7	SAT2/BOT12/12* (BVI)	BOT12-AD	638	638	2	100.00	0.00	III	unnamed
8	SAT2/BOT/13/2012	BOT12-13	648	647	0	99.85	0.15	III	unnamed
9	SAT2/BOT/15/2012	BOT12-15	648	647	0	99.85	0.15	III	unnamed
10	SAT2/BOT/18/2012	BOT12-18	648	647	0	99.85	0.15	III	unnamed
<b>Most Closely Related Reference Viruses</b>									
(see <a href="http://www.wrlfmd.org/fmd_genotyping/prototypes.htm">http://www.wrlfmd.org/fmd_genotyping/prototypes.htm</a> )									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	SAT2/BOT/P3/98 (buffalo 29) (AF367124)	BOT98-AC	647	554	1	85.63	14.37	III	unnamed
2	SAT2/RHO/1/48 (AY593847)	ZAM48B01	648	532	0	82.10	17.90	III	unnamed
3	SAT2/KEN/1/84 (K7/84) (AY344505)	KEN84-AB	648	513	0	79.17	20.83	IV	unnamed
4	SAT2/ETH/1/90 (1989)(AY343935)	ETH90-AA	648	507	0	78.24	21.76	IV	unnamed
5	SAT2/ZIM/14/2002	ZIM02-14	648	503	0	77.62	22.38	I	unnamed
6	SAT2/MAL/1/2003	MAL03-01	648	501	0	77.31	22.69	I	unnamed
7	SAT2/SA/106/59 (AY593848)	RSA59--A	648	500	0	77.16	22.84	I	unnamed
8	SAT2/ZIM/7/83 (AF136607)	ZIM83A07	648	485	0	74.85	25.15	II	unnamed
9	SAT2/ZIM/5/81 (EF134951)	ZIM81-AA	648	481	0	74.23	25.77	II	unnamed
10	SAT2/NIG/2/75 (AF367139)	NIG75-02	648	476	0	73.46	26.54	V	unnamed

nt, nucleotides

\*, not a WRLFMD reference number

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# FAO World Reference Laboratory for FMD Genotyping Report

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

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Serotype: SAT2	Report date: 18/12/2012
WRLFMD Ref No: BOT/18/2012	Reported by: N.J. Knowles
Batch No: WRLFMD/2012/00035	Checked by: D.P. King
Sender Ref: Bot 18/12	
Location: Spanplek crush, Maun, Zone 2, Botswana	Topotype: III
Date collected: 19/07/2012	Genotype/strain: unnamed
Date received by WRLFMD: 28/09/2012	Sequence filename: BOT12-18.SEQ
Date received for sequencing: 12/12/2012	Date sequence last updated: 17/12/2012
Species: Bovine	No. of Nt determined: 648
Material used: BTY1 05/12/2012	No. of ambiguities: 0
Region sequenced: VP1	Gene length: 648
RT-PCR primers: SAT2-1C445F/SAT-2B208R	Total no. of comparisons: 608
SAT2-P1-1223F/SAT-2B208R	Min. no. of nt for comparison: 600
	Total turn-around time: 81 days
	Sequencing time: 6 days
<b>Comments:</b>	

<b>Most Closely Related Viruses</b>									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	SAT2/BOT/13/2012	BOT12-13	648	648	0	100.00	0.00	III	unnamed
2	SAT2/BOT/15/2012	BOT12-15	648	648	0	100.00	0.00	III	unnamed
3	SAT2/BOT14/12* (BVI)	BOT12-AE	646	646	0	100.00	0.00	III	unnamed
4	SAT2/BOT/10/2012	BOT12-10	648	647	0	99.85	0.15	III	unnamed
5	SAT2/BOT/11/2012	BOT12-11	648	647	0	99.85	0.15	III	unnamed
6	SAT2/BOT/12/2012	BOT12-12	648	647	0	99.85	0.15	III	unnamed
7	SAT2/BOT/14/2012	BOT12-14	648	647	0	99.85	0.15	III	unnamed
8	SAT2/BOT/16/2012	BOT12-16	648	647	0	99.85	0.15	III	unnamed
9	SAT2/BOT/17/2012	BOT12-17	648	647	0	99.85	0.15	III	unnamed
10	SAT2/BOT/8/2012	BOT12-08	648	647	0	99.85	0.15	III	unnamed
<b>Most Closely Related Reference Viruses</b>									
(see <a href="http://www.wrlfmd.org/fmd_genotyping/prototypes.htm">http://www.wrlfmd.org/fmd_genotyping/prototypes.htm</a> )									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	SAT2/BOT/P3/98 (buffalo 29) (AF367124)	BOT98-AC	647	553	1	85.47	14.53	III	unnamed
2	SAT2/RHO/1/48 (AY593847)	ZAM48B01	648	531	0	81.94	18.06	III	unnamed
3	SAT2/KEN/1/84 (K7/84) (AY344505)	KEN84-AB	648	512	0	79.01	20.99	IV	unnamed
4	SAT2/ETH/1/90 (1989)(AY343935)	ETH90-AA	648	506	0	78.09	21.91	IV	unnamed
5	SAT2/MAL/1/2003	MAL03-01	648	502	0	77.47	22.53	I	unnamed
6	SAT2/ZIM/14/2002	ZIM02-14	648	502	0	77.47	22.53	I	unnamed
7	SAT2/SA/106/59 (AY593848)	RSA59--A	648	500	0	77.16	22.84	I	unnamed
8	SAT2/ZIM/7/83 (AF136607)	ZIM83A07	648	486	0	75.00	25.00	II	unnamed
9	SAT2/ZIM/5/81 (EF134951)	ZIM81-AA	648	482	0	74.38	25.62	II	unnamed
10	SAT2/NIG/2/75 (AF367139)	NIG75-02	648	477	0	73.61	26.39	V	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: SAT2	Report date: 18/12/2012
WRLFMD Ref No: BOT/19/2012	Reported by: N.J. Knowles
Batch No: WRLFMD/2012/00035	Checked by: D.P. King
Sender Ref: Bot 19/12	
Location: Nokaneng, Maun, Zone 2, Botswana	Topotype: III
Date collected: 05/08/2012	Genotype/strain: unnamed
Date received by WRLFMD: 28/09/2012	Sequence filename: BOT12-19.SEQ
Date received for sequencing: 12/12/2012	Date sequence last updated: 17/12/2012
Species: Bovine	No. of Nt determined: 648
Material used: BTY1 05/12/2012	No. of ambiguities: 0
Region sequenced: VP1	Gene length: 648
RT-PCR primers: SAT2-1C445F/SAT-2B208R	Total no. of comparisons: 608
SAT2-P1-1223F/SAT-2B208R	Min. no. of nt for comparison: 600
	Total turn-around time: 81 days
	Sequencing time: 6 days
Comments:	

<b>Most Closely Related Viruses</b>									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	SAT2/BOT/20/2012	BOT12-20	648	648	0	100.00	0.00	III	unnamed
2	SAT2/BOT/21/2012	BOT12-21	648	648	0	100.00	0.00	III	unnamed
3	SAT2/BOT/p11/2012* (BVI)	BOT12-AG	630	629	2	99.84	0.16	III	unnamed
4	SAT2/BOT/p52/2012* (BVI)	BOT12-AH	632	631	0	99.84	0.16	III	unnamed
5	SAT2/BOT/1/2012	BOT12-01	648	643	0	99.23	0.77	III	unnamed
6	SAT2/BOT/2/2012	BOT12-02	648	643	0	99.23	0.77	III	unnamed
7	SAT2/BOT/3/2012	BOT12-03	648	642	0	99.07	0.93	III	unnamed
8	SAT2/BOT/4/2012	BOT12-04	648	642	0	99.07	0.93	III	unnamed
9	SAT2/BOT/5/2012	BOT12-05	648	642	0	99.07	0.93	III	unnamed
10	SAT2/BOT/7/2012	BOT12A07	648	642	0	99.07	0.93	III	unnamed
<b>Most Closely Related Reference Viruses</b>									
(see <a href="http://www.wrlfmd.org/fmd_genotyping/prototypes.htm">http://www.wrlfmd.org/fmd_genotyping/prototypes.htm</a> )									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	SAT2/BOT/P3/98 (buffalo 29) (AF367124)	BOT98-AC	647	560	1	86.55	13.45	III	unnamed
2	SAT2/RHO/1/48 (AY593847)	ZAM48B01	648	528	0	81.48	18.52	III	unnamed
3	SAT2/KEN/1/84 (K7/84) (AY344505)	KEN84-AB	648	511	0	78.86	21.14	IV	unnamed
4	SAT2/ETH/1/90 (1989)(AY343935)	ETH90-AA	648	509	0	78.55	21.45	IV	unnamed
5	SAT2/MAL/1/2003	MAL03-01	648	509	0	78.55	21.45	I	unnamed
6	SAT2/ZIM/14/2002	ZIM02-14	648	505	0	77.93	22.07	I	unnamed
7	SAT2/SA/106/59 (AY593848)	RSA59--A	648	503	0	77.62	22.38	I	unnamed
8	SAT2/ZIM/7/83 (AF136607)	ZIM83A07	648	492	0	75.93	24.07	II	unnamed
9	SAT2/NIG/2/75 (AF367139)	NIG75-02	648	488	0	75.31	24.69	V	unnamed
10	SAT2/GHA/2/90 (AF479415)	GHA90A02	648	482	0	74.38	25.62	V	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: SAT2	Report date: 18/12/2012
WRLFMD Ref No: BOT/20/2012	Reported by: N.J. Knowles
Batch No: WRLFMD/2012/00035	Checked by: D.P. King
Sender Ref: Bot 20/12	
Location: Nokaneng, Maun, Zone 2, Botswana	Topotype: III
Date collected: 05/08/2012	Genotype/strain: unnamed
Date received by WRLFMD: 28/09/2012	Sequence filename: BOT12-20.SEQ
Date received for sequencing: 12/12/2012	Date sequence last updated: 17/12/2012
Species: Bovine	No. of Nt determined: 648
Material used: BTY1 05/12/2012	No. of ambiguities: 0
Region sequenced: VP1	Gene length: 648
RT-PCR primers: SAT2-1C445F/SAT-2B208R	Total no. of comparisons: 608
SAT2-P1-1223F/SAT-2B208R	Min. no. of nt for comparison: 600
	Total turn-around time: 81 days
	Sequencing time: 6 days
Comments:	

<b>Most Closely Related Viruses</b>									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	SAT2/BOT/19/2012	BOT12-19	648	648	0	100.00	0.00	III	unnamed
2	SAT2/BOT/21/2012	BOT12-21	648	648	0	100.00	0.00	III	unnamed
3	SAT2/BOT/p11/2012* (BVI)	BOT12-AG	630	629	2	99.84	0.16	III	unnamed
4	SAT2/BOT/p52/2012* (BVI)	BOT12-AH	632	631	0	99.84	0.16	III	unnamed
5	SAT2/BOT/1/2012	BOT12-01	648	643	0	99.23	0.77	III	unnamed
6	SAT2/BOT/2/2012	BOT12-02	648	643	0	99.23	0.77	III	unnamed
7	SAT2/BOT/3/2012	BOT12-03	648	642	0	99.07	0.93	III	unnamed
8	SAT2/BOT/4/2012	BOT12-04	648	642	0	99.07	0.93	III	unnamed
9	SAT2/BOT/5/2012	BOT12-05	648	642	0	99.07	0.93	III	unnamed
10	SAT2/BOT/7/2012	BOT12A07	648	642	0	99.07	0.93	III	unnamed
<b>Most Closely Related Reference Viruses</b>									
(see <a href="http://www.wrlfmd.org/fmd_genotyping/prototypes.htm">http://www.wrlfmd.org/fmd_genotyping/prototypes.htm</a> )									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	SAT2/BOT/P3/98 (buffalo 29) (AF367124)	BOT98-AC	647	560	1	86.55	13.45	III	unnamed
2	SAT2/RHO/1/48 (AY593847)	ZAM48B01	648	528	0	81.48	18.52	III	unnamed
3	SAT2/KEN/1/84 (K7/84) (AY344505)	KEN84-AB	648	511	0	78.86	21.14	IV	unnamed
4	SAT2/ETH/1/90 (1989)(AY343935)	ETH90-AA	648	509	0	78.55	21.45	IV	unnamed
5	SAT2/MAL/1/2003	MAL03-01	648	509	0	78.55	21.45	I	unnamed
6	SAT2/ZIM/14/2002	ZIM02-14	648	505	0	77.93	22.07	I	unnamed
7	SAT2/SA/106/59 (AY593848)	RSA59--A	648	503	0	77.62	22.38	I	unnamed
8	SAT2/ZIM/7/83 (AF136607)	ZIM83A07	648	492	0	75.93	24.07	II	unnamed
9	SAT2/NIG/2/75 (AF367139)	NIG75-02	648	488	0	75.31	24.69	V	unnamed
10	SAT2/GHA/2/90 (AF479415)	GHA90A02	648	482	0	74.38	25.62	V	unnamed

nt, nucleotides

\*, not a WRLFMD reference number

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Serotype: SAT2	Report date: 18/12/2012
WRLFMD Ref No: BOT/21/2012	Reported by: N.J. Knowles
Batch No: WRLFMD/2012/00035	Checked by: D.P. King
Sender Ref: Bot 21/12	
Location: Nokaneng, Maun, Zone 2, Botswana	Topotype: III
Date collected: 05/08/2012	Genotype/strain: unnamed
Date received by WRLFMD: 28/09/2012	Sequence filename: BOT12-21.SEQ
Date received for sequencing: 12/12/2012	Date sequence last updated: 17/12/2012
Species: Bovine	No. of Nt determined: 648
Material used: BTY1 07/12/2012	No. of ambiguities: 0
Region sequenced: VP1	Gene length: 648
RT-PCR primers: SAT2-1C445F/SAT-2B208R	Total no. of comparisons: 608
SAT2-P1-1223F/SAT-2B208R	Min. no. of nt for comparison: 600
	Total turn-around time: 81 days
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Comments:	

<b>Most Closely Related Viruses</b>									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	SAT2/BOT/19/2012	BOT12-19	648	648	0	100.00	0.00	III	unnamed
2	SAT2/BOT/20/2012	BOT12-20	648	648	0	100.00	0.00	III	unnamed
3	SAT2/BOT/p11/2012* (BVI)	BOT12-AG	630	629	2	99.84	0.16	III	unnamed
4	SAT2/BOT/p52/2012* (BVI)	BOT12-AH	632	631	0	99.84	0.16	III	unnamed
5	SAT2/BOT/1/2012	BOT12-01	648	643	0	99.23	0.77	III	unnamed
6	SAT2/BOT/2/2012	BOT12-02	648	643	0	99.23	0.77	III	unnamed
7	SAT2/BOT/3/2012	BOT12-03	648	642	0	99.07	0.93	III	unnamed
8	SAT2/BOT/4/2012	BOT12-04	648	642	0	99.07	0.93	III	unnamed
9	SAT2/BOT/5/2012	BOT12-05	648	642	0	99.07	0.93	III	unnamed
10	SAT2/BOT/7/2012	BOT12A07	648	642	0	99.07	0.93	III	unnamed
<b>Most Closely Related Reference Viruses</b>									
(see <a href="http://www.wrlfmd.org/fmd_genotyping/prototypes.htm">http://www.wrlfmd.org/fmd_genotyping/prototypes.htm</a> )									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
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2	SAT2/RHO/1/48 (AY593847)	ZAM48B01	648	528	0	81.48	18.52	III	unnamed
3	SAT2/KEN/1/84 (K7/84) (AY344505)	KEN84-AB	648	511	0	78.86	21.14	IV	unnamed
4	SAT2/ETH/1/90 (1989)(AY343935)	ETH90-AA	648	509	0	78.55	21.45	IV	unnamed
5	SAT2/MAL/1/2003	MAL03-01	648	509	0	78.55	21.45	I	unnamed
6	SAT2/ZIM/14/2002	ZIM02-14	648	505	0	77.93	22.07	I	unnamed
7	SAT2/SA/106/59 (AY593848)	RSA59--A	648	503	0	77.62	22.38	I	unnamed
8	SAT2/ZIM/7/83 (AF136607)	ZIM83A07	648	492	0	75.93	24.07	II	unnamed
9	SAT2/NIG/2/75 (AF367139)	NIG75-02	648	488	0	75.31	24.69	V	unnamed
10	SAT2/GHA/2/90 (AF479415)	GHA90A02	648	482	0	74.38	25.62	V	unnamed

nt, nucleotides

\*, not a WRLFMD reference number

Assembled with Report Generator v4.1

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# Report on FMDV SAT 2 in Botswana in 2012

Batch: WRLFMD/2012/00035

◆ indicates viruses in this batch

Software: MEGA 5.1

Analysis

----- Phylogeny Reconstruction

Scope ----- All Selected Taxa

Statistical Method ----- Neighbor-joining

Phylogeny Test

----- Bootstrap method

No. of Bootstrap Replications ----- 1000

Substitution Model

----- Nucleotide

Model/Method ----- Kimura 2-parameter model

Substitutions to Include ----- d: Transitions + Transversions

Rates and Patterns

----- Uniform rates

Pattern among Lineages ----- Same (Homogeneous)

Data Subset to Use

----- Pairwise deletion

Codons Included ----- 1st+2nd+3rd+Non-Coding

No. of Sites : 651

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 December 2012

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