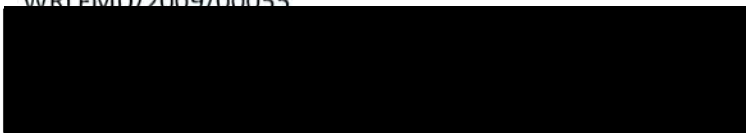




INSTITUTE FOR ANIMAL HEALTH
Director: Professor Martin W. Shirley, PhD
PIRBRIGHT LABORATORY
Ash Road,
Pirbright,
Surrey,
GU24 0NF
Intn Tel: 00 44 1483 232441
Tel: 01483 232441 Fax: 01483 232621

FMD Sequencing Report

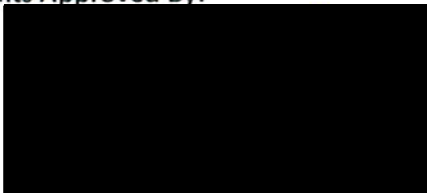
Lab Reference WRL Batch Number: WRLFMD/2009/00055
Sender Details: 

Date Received: 7th December 2009
Country of Origin: Bhutan
Date Reported: 2nd February 2010

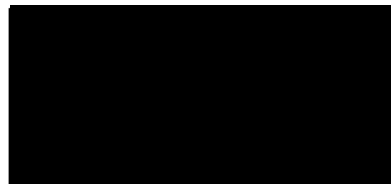
Dear Dr. Dahal,

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:

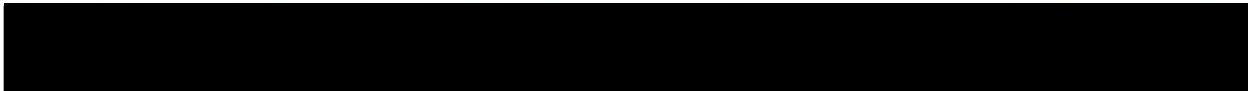


Official Stamp:



Date:

2/2/10


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

WRLFMD Genotyping Report Form

Serotype: O WRLFMD Ref No: BHU/2/2009 Batch No: WRLFMD/2009/00055 Sender Ref: 351-1 Location: Dorji, Punakha, Bhutan Date collected: 05/06/2009 Date received by WRLFMD: 07/12/2009 Date received for sequencing: 12/01/2010 Species: Cattle Material used: BTy1 Region sequenced: VP1 RT-PCR primers: O-1C244F/EUR-2B52R O-1C272F/EUR-2B52R	Report date: 21/01/2010 Reported by: N.J. Knowles Checked by: D.P. King Topotype: ME-SA Genotype/strain: Unnamed Sequence filename: BHU09-02.SEQ Date sequence last updated: 19/01/2010 No. of Nt determined: 639 No. of ambiguities: 0 Gene length: 639 Total no. of comparisons: 2224 Min. no. of nt for comparison: 300 Total turn-around time: 45 days Sequencing time: 9 days
Comments:	

Most Closely Related Viruses									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	O/BHU/18/2009	BHU09-18	639	639	0	100	0	ME-SA	unnamed
2	O/BHU/4/2009	BHU09-04	639	639	0	100	0	ME-SA	unnamed
3	O/BHU/5/2009	BHU09-05	639	639	0	100	0	ME-SA	unnamed
4	O/BHU/6/2009	BHU09-06	639	639	0	100	0	ME-SA	unnamed
5	O/BAN/26/2009	BAN09-26	639	638	0	99.84	0.16	ME-SA	unnamed
6	O/BAN/27/2009	BAN09-27	639	638	0	99.84	0.16	ME-SA	unnamed
7	O/BHU/10/2009	BHU09-10	639	638	0	99.84	0.16	ME-SA	unnamed
8	O/BHU/19/2009	BHU09-19	639	638	0	99.84	0.16	ME-SA	unnamed
9	O/BHU/8/2009	BHU09-08	639	638	0	99.84	0.16	ME-SA	unnamed
10	O/BHU/9/2009	BHU09-09	639	638	0	99.84	0.16	ME-SA	unnamed
Most Closely Related Reference Viruses									
(see http://www.wrlfmd.org/fmd_genotyping/prototypes.htm)									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	O/UKG/35/2001 (AJ539141)	UKG01-35	639	572	0	89.51	10.49	ME-SA	PanAsia
2	O/IRN/8/2005	IRN05-08	639	570	0	89.2	10.8	ME-SA	PanAsia-2
3	O/IND/53/79 (AF292107)	IND79A53	639	566	0	88.58	11.42	ME-SA	unnamed
4	O1/Manisa/TUR/69 (AY593823)	TUR69--G	639	563	0	88.11	11.89	ME-SA	unnamed
5	O/IND/R2/75* (AF204276)	IND75--A	639	557	0	87.17	12.83	ME-SA	unnamed
6	O/SUD/2/86 (DQ165075)	SUD86-02	639	555	0	86.85	13.15	EA-3	unnamed
7	O/K40/84*	KEN84-40	639	554	0	86.7	13.3	EA-1	unnamed
8	O/ETH/1/2007 (FJ798137)	ETH07-01	639	553	0	86.54	13.46	EA-3	unnamed
9	O/TAI/189/87* (TRRL)	TAI87-AC	639	548	0	85.76	14.24	SEA	unnamed
10	O/ETH/3/2004 (FJ798109)	ETH04-03	639	541	0	84.66	15.34	EA-3	unnamed
nt, nucleotides *, not a WRLFMD reference number									

WRLFMD Genotyping Report Form

Serotype: O WRLFMD Ref No: BHU/3/2009 Batch No: WRLFMD/2009/00055 Sender Ref: 351-2 Location: Dorji, Punakha, Bhutan Date collected: 05/06/2009 Date received by WRLFMD: 07/12/2009 Date received for sequencing: 12/01/2010 Species: Cattle Material used: BTy1 Region sequenced: VP1 RT-PCR primers: O-1C244F/EUR-2B52R O-1C272F/EUR-2B52R	Report date: 21/01/2010 Reported by: N.J. Knowles Checked by: D.P. King Topotype: ME-SA Genotype/strain: Unnamed Sequence filename: BHU09-03.SEQ Date sequence last updated: 19/01/2010 No. of Nt determined: 639 No. of ambiguities: 0 Gene length: 639 Total no. of comparisons: 2224 Min. no. of nt for comparison: 300 Total turn-around time: 45 days Sequencing time: 9 days
Comments:	

Most Closely Related Viruses									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	O/BHU/18/2009	BHU09-18	639	637	0	99.69	0.31	ME-SA	unnamed
2	O/BHU/2/2009	BHU09-02	639	637	0	99.69	0.31	ME-SA	unnamed
3	O/BHU/4/2009	BHU09-04	639	637	0	99.69	0.31	ME-SA	unnamed
4	O/BHU/5/2009	BHU09-05	639	637	0	99.69	0.31	ME-SA	unnamed
5	O/BHU/6/2009	BHU09-06	639	637	0	99.69	0.31	ME-SA	unnamed
6	O/BAN/26/2009	BAN09-26	639	636	0	99.53	0.47	ME-SA	unnamed
7	O/BAN/27/2009	BAN09-27	639	636	0	99.53	0.47	ME-SA	unnamed
8	O/BHU/10/2009	BHU09-10	639	636	0	99.53	0.47	ME-SA	unnamed
9	O/BHU/16/2009	BHU09-16	639	636	0	99.53	0.47	ME-SA	unnamed
10	O/BHU/19/2009	BHU09-19	639	636	0	99.53	0.47	ME-SA	unnamed
Most Closely Related Reference Viruses									
(see http://www.wrlfmd.org/fmd_genotyping/prototypes.htm)									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	O/IRN/8/2005	IRN05-08	639	570	0	89.2	10.8	ME-SA	PanAsia-2
2	O/UKG/35/2001 (AJ539141)	UKG01-35	639	570	0	89.2	10.8	ME-SA	PanAsia
3	O/IND/53/79 (AF292107)	IND79A53	639	564	0	88.26	11.74	ME-SA	unnamed
4	O1/Manisa/TUR/69 (AY593823)	TUR69--G	639	561	0	87.79	12.21	ME-SA	unnamed
5	O/IND/R2/75* (AF204276)	IND75--A	639	557	0	87.17	12.83	ME-SA	unnamed
6	O/K40/84*	KEN84-40	639	554	0	86.7	13.3	EA-1	unnamed
7	O/ETH/1/2007 (FJ798137)	ETH07-01	639	553	0	86.54	13.46	EA-3	unnamed
8	O/SUD/2/86 (DQ165075)	SUD86-02	639	553	0	86.54	13.46	EA-3	unnamed
9	O/TAI/189/87* (TRRL)	TAI87-AC	639	548	0	85.76	14.24	SEA	unnamed
10	O/ETH/3/2004 (FJ798109)	ETH04-03	639	541	0	84.66	15.34	EA-3	unnamed
nt, nucleotides *, not a WRLFMD reference number									

WRLFMD Genotyping Report Form

Serotype: O WRLFMD Ref No: BHU/4/2009 Batch No: WRLFMD/2009/00055 Sender Ref: 351-3 Location: Dorji, Punakha, Bhutan Date collected: 05/06/2009 Date received by WRLFMD: 07/12/2009 Date received for sequencing: 12/01/2010 Species: Cattle Material used: BTy1 Region sequenced: VP1 RT-PCR primers: O-1C244F/EUR-2B52R O-1C272F/EUR-2B52R	Report date: 21/01/2010 Reported by: N.J. Knowles Checked by: D.P. King Topotype: ME-SA Genotype/strain: Unnamed Sequence filename: BHU09-04.SEQ Date sequence last updated: 19/01/2010 No. of Nt determined: 639 No. of ambiguities: 0 Gene length: 639 Total no. of comparisons: 2224 Min. no. of nt for comparison: 300 Total turn-around time: 45 days Sequencing time: 9 days
Comments:	

Most Closely Related Viruses									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	O/BHU/18/2009	BHU09-18	639	639	0	100	0	ME-SA	unnamed
2	O/BHU/2/2009	BHU09-02	639	639	0	100	0	ME-SA	unnamed
3	O/BHU/5/2009	BHU09-05	639	639	0	100	0	ME-SA	unnamed
4	O/BHU/6/2009	BHU09-06	639	639	0	100	0	ME-SA	unnamed
5	O/BAN/26/2009	BAN09-26	639	638	0	99.84	0.16	ME-SA	unnamed
6	O/BAN/27/2009	BAN09-27	639	638	0	99.84	0.16	ME-SA	unnamed
7	O/BHU/10/2009	BHU09-10	639	638	0	99.84	0.16	ME-SA	unnamed
8	O/BHU/19/2009	BHU09-19	639	638	0	99.84	0.16	ME-SA	unnamed
9	O/BHU/8/2009	BHU09-08	639	638	0	99.84	0.16	ME-SA	unnamed
10	O/BHU/9/2009	BHU09-09	639	638	0	99.84	0.16	ME-SA	unnamed
Most Closely Related Reference Viruses									
(see http://www.wrlfmd.org/fmd_genotyping/prototypes.htm)									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	O/UKG/35/2001 (AJ539141)	UKG01-35	639	572	0	89.51	10.49	ME-SA	PanAsia
2	O/IRN/8/2005	IRN05-08	639	570	0	89.2	10.8	ME-SA	PanAsia-2
3	O/IND/53/79 (AF292107)	IND79A53	639	566	0	88.58	11.42	ME-SA	unnamed
4	O1/Manisa/TUR/69 (AY593823)	TUR69--G	639	563	0	88.11	11.89	ME-SA	unnamed
5	O/IND/R2/75* (AF204276)	IND75--A	639	557	0	87.17	12.83	ME-SA	unnamed
6	O/SUD/2/86 (DQ165075)	SUD86-02	639	555	0	86.85	13.15	EA-3	unnamed
7	O/K40/84*	KEN84-40	639	554	0	86.7	13.3	EA-1	unnamed
8	O/ETH/1/2007 (FJ798137)	ETH07-01	639	553	0	86.54	13.46	EA-3	unnamed
9	O/TAI/189/87* (TRRL)	TAI87-AC	639	548	0	85.76	14.24	SEA	unnamed
10	O/ETH/3/2004 (FJ798109)	ETH04-03	639	541	0	84.66	15.34	EA-3	unnamed
nt, nucleotides *, not a WRLFMD reference number									

WRLFMD Genotyping Report Form

Serotype: O WRLFMD Ref No: BHU/5/2009 Batch No: WRLFMD/2009/00055 Sender Ref: 352-12 Location: Am Tshering, Punakha, Bhutan Date collected: 05/06/2009 Date received by WRLFMD: 07/12/2009 Date received for sequencing: 12/01/2010 Species: Cattle Material used: BTy2 Region sequenced: VP1 RT-PCR primers: O-1C244F/EUR-2B52R O-1C272F/EUR-2B52R	Report date: 21/01/2010 Reported by: N.J. Knowles Checked by: D.P. King Topotype: ME-SA Genotype/strain: Unnamed Sequence filename: BHU09-05.SEQ Date sequence last updated: 19/01/2010 No. of Nt determined: 639 No. of ambiguities: 0 Gene length: 639 Total no. of comparisons: 2224 Min. no. of nt for comparison: 300 Total turn-around time: 45 days Sequencing time: 9 days
Comments:	

Most Closely Related Viruses									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	O/BHU/18/2009	BHU09-18	639	639	0	100	0	ME-SA	unnamed
2	O/BHU/2/2009	BHU09-02	639	639	0	100	0	ME-SA	unnamed
3	O/BHU/4/2009	BHU09-04	639	639	0	100	0	ME-SA	unnamed
4	O/BHU/6/2009	BHU09-06	639	639	0	100	0	ME-SA	unnamed
5	O/BAN/26/2009	BAN09-26	639	638	0	99.84	0.16	ME-SA	unnamed
6	O/BAN/27/2009	BAN09-27	639	638	0	99.84	0.16	ME-SA	unnamed
7	O/BHU/10/2009	BHU09-10	639	638	0	99.84	0.16	ME-SA	unnamed
8	O/BHU/19/2009	BHU09-19	639	638	0	99.84	0.16	ME-SA	unnamed
9	O/BHU/8/2009	BHU09-08	639	638	0	99.84	0.16	ME-SA	unnamed
10	O/BHU/9/2009	BHU09-09	639	638	0	99.84	0.16	ME-SA	unnamed
Most Closely Related Reference Viruses									
(see http://www.wrlfmd.org/fmd_genotyping/prototypes.htm)									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	O/UKG/35/2001 (AJ539141)	UKG01-35	639	572	0	89.51	10.49	ME-SA	PanAsia
2	O/IRN/8/2005	IRN05-08	639	570	0	89.2	10.8	ME-SA	PanAsia-2
3	O/IND/53/79 (AF292107)	IND79A53	639	566	0	88.58	11.42	ME-SA	unnamed
4	O1/Manisa/TUR/69 (AY593823)	TUR69--G	639	563	0	88.11	11.89	ME-SA	unnamed
5	O/IND/R2/75* (AF204276)	IND75--A	639	557	0	87.17	12.83	ME-SA	unnamed
6	O/SUD/2/86 (DQ165075)	SUD86-02	639	555	0	86.85	13.15	EA-3	unnamed
7	O/K40/84*	KEN84-40	639	554	0	86.7	13.3	EA-1	unnamed
8	O/ETH/1/2007 (FJ798137)	ETH07-01	639	553	0	86.54	13.46	EA-3	unnamed
9	O/TAI/189/87* (TRRL)	TAI87-AC	639	548	0	85.76	14.24	SEA	unnamed
10	O/ETH/3/2004 (FJ798109)	ETH04-03	639	541	0	84.66	15.34	EA-3	unnamed
nt, nucleotides *, not a WRLFMD reference number									

WRLFMD Genotyping Report Form

Serotype: O WRLFMD Ref No: BHU/6/2009 Batch No: WRLFMD/2009/00055 Sender Ref: 352-14 Location: Am Tshering, Punakha, Bhutan Date collected: 05/06/2009 Date received by WRLFMD: 07/12/2009 Date received for sequencing: 12/01/2010 Species: Cattle Material used: BTy1 Region sequenced: VP1 RT-PCR primers: O-1C244F/EUR-2B52R O-1C272F/EUR-2B52R	Report date: 21/01/2010 Reported by: N.J. Knowles Checked by: D.P. King Topotype: ME-SA Genotype/strain: Unnamed Sequence filename: BHU09-06.SEQ Date sequence last updated: 19/01/2010 No. of Nt determined: 639 No. of ambiguities: 0 Gene length: 639 Total no. of comparisons: 2224 Min. no. of nt for comparison: 300 Total turn-around time: 45 days Sequencing time: 9 days
Comments:	

Most Closely Related Viruses									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	O/BHU/18/2009	BHU09-18	639	639	0	100	0	ME-SA	unnamed
2	O/BHU/2/2009	BHU09-02	639	639	0	100	0	ME-SA	unnamed
3	O/BHU/4/2009	BHU09-04	639	639	0	100	0	ME-SA	unnamed
4	O/BHU/5/2009	BHU09-05	639	639	0	100	0	ME-SA	unnamed
5	O/BAN/26/2009	BAN09-26	639	638	0	99.84	0.16	ME-SA	unnamed
6	O/BAN/27/2009	BAN09-27	639	638	0	99.84	0.16	ME-SA	unnamed
7	O/BHU/10/2009	BHU09-10	639	638	0	99.84	0.16	ME-SA	unnamed
8	O/BHU/19/2009	BHU09-19	639	638	0	99.84	0.16	ME-SA	unnamed
9	O/BHU/8/2009	BHU09-08	639	638	0	99.84	0.16	ME-SA	unnamed
10	O/BHU/9/2009	BHU09-09	639	638	0	99.84	0.16	ME-SA	unnamed
Most Closely Related Reference Viruses									
(see http://www.wrlfmd.org/fmd_genotyping/prototypes.htm)									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	O/UKG/35/2001 (AJ539141)	UKG01-35	639	572	0	89.51	10.49	ME-SA	PanAsia
2	O/IRN/8/2005	IRN05-08	639	570	0	89.2	10.8	ME-SA	PanAsia-2
3	O/IND/53/79 (AF292107)	IND79A53	639	566	0	88.58	11.42	ME-SA	unnamed
4	O1/Manisa/TUR/69 (AY593823)	TUR69--G	639	563	0	88.11	11.89	ME-SA	unnamed
5	O/IND/R2/75* (AF204276)	IND75--A	639	557	0	87.17	12.83	ME-SA	unnamed
6	O/SUD/2/86 (DQ165075)	SUD86-02	639	555	0	86.85	13.15	EA-3	unnamed
7	O/K40/84*	KEN84-40	639	554	0	86.7	13.3	EA-1	unnamed
8	O/ETH/1/2007 (FJ798137)	ETH07-01	639	553	0	86.54	13.46	EA-3	unnamed
9	O/TAI/189/87* (TRRL)	TAI87-AC	639	548	0	85.76	14.24	SEA	unnamed
10	O/ETH/3/2004 (FJ798109)	ETH04-03	639	541	0	84.66	15.34	EA-3	unnamed
nt, nucleotides *, not a WRLFMD reference number									

WRLFMD Genotyping Report Form

Serotype: O WRLFMD Ref No: BHU/7/2009 Batch No: WRLFMD/2009/00055 Sender Ref: 352-16 Location: Am Tshering, Punakha, Bhutan Date collected: 05/06/2009 Date received by WRLFMD: 07/12/2009 Date received for sequencing: 12/01/2010 Species: Cattle Material used: BTy1 Region sequenced: VP1 RT-PCR primers: O-1C244F/EUR-2B52R O-1C272F/EUR-2B52R	Report date: 21/01/2010 Reported by: N.J. Knowles Checked by: D.P. King Topotype: ME-SA Genotype/strain: Unnamed Sequence filename: BHU09-07.SEQ Date sequence last updated: 19/01/2010 No. of Nt determined: 639 No. of ambiguities: 0 Gene length: 639 Total no. of comparisons: 2224 Min. no. of nt for comparison: 300 Total turn-around time: 45 days Sequencing time: 9 days
Comments:	

Most Closely Related Viruses									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	O/BHU/18/2009	BHU09-18	639	637	0	99.69	0.31	ME-SA	unnamed
2	O/BHU/2/2009	BHU09-02	639	637	0	99.69	0.31	ME-SA	unnamed
3	O/BHU/4/2009	BHU09-04	639	637	0	99.69	0.31	ME-SA	unnamed
4	O/BHU/5/2009	BHU09-05	639	637	0	99.69	0.31	ME-SA	unnamed
5	O/BHU/6/2009	BHU09-06	639	637	0	99.69	0.31	ME-SA	unnamed
6	O/BAN/26/2009	BAN09-26	639	636	0	99.53	0.47	ME-SA	unnamed
7	O/BAN/27/2009	BAN09-27	639	636	0	99.53	0.47	ME-SA	unnamed
8	O/BHU/10/2009	BHU09-10	639	636	0	99.53	0.47	ME-SA	unnamed
9	O/BHU/19/2009	BHU09-19	639	636	0	99.53	0.47	ME-SA	unnamed
10	O/BHU/8/2009	BHU09-08	639	636	0	99.53	0.47	ME-SA	unnamed
Most Closely Related Reference Viruses									
(see http://www.wrlfmd.org/fmd_genotyping/prototypes.htm)									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	O/UKG/35/2001 (AJ539141)	UKG01-35	639	570	0	89.2	10.8	ME-SA	PanAsia
2	O/IRN/8/2005	IRN05-08	639	568	0	88.89	11.11	ME-SA	PanAsia-2
3	O/IND/53/79 (AF292107)	IND79A53	639	564	0	88.26	11.74	ME-SA	unnamed
4	O1/Manisa/TUR/69 (AY593823)	TUR69--G	639	561	0	87.79	12.21	ME-SA	unnamed
5	O/IND/R2/75* (AF204276)	IND75--A	639	555	0	86.85	13.15	ME-SA	unnamed
6	O/SUD/2/86 (DQ165075)	SUD86-02	639	553	0	86.54	13.46	EA-3	unnamed
7	O/ETH/1/2007 (FJ798137)	ETH07-01	639	552	0	86.38	13.62	EA-3	unnamed
8	O/K40/84*	KEN84-40	639	552	0	86.38	13.62	EA-1	unnamed
9	O/TAI/189/87* (TRRL)	TAI87-AC	639	547	0	85.6	14.4	SEA	unnamed
10	O/ETH/3/2004 (FJ798109)	ETH04-03	639	540	0	84.51	15.49	EA-3	unnamed
nt, nucleotides *, not a WRLFMD reference number									

WRLFMD Genotyping Report Form

Serotype: O WRLFMD Ref No: BHU/8/2009 Batch No: WRLFMD/2009/00055 Sender Ref: 381-4 Location: Gembo Dorji, Gasa, Bhutan Date collected: 03/07/2009 Date received by WRLFMD: 07/12/2009 Date received for sequencing: 12/01/2010 Species: Cattle Material used: BTy1 Region sequenced: VP1 RT-PCR primers: O-1C244F/EUR-2B52R O-1C272F/EUR-2B52R	Report date: 21/01/2010 Reported by: N.J. Knowles Checked by: D.P. King Topotype: ME-SA Genotype/strain: Unnamed Sequence filename: BHU09-08.SEQ Date sequence last updated: 19/01/2010 No. of Nt determined: 639 No. of ambiguities: 0 Gene length: 639 Total no. of comparisons: 2224 Min. no. of nt for comparison: 300 Total turn-around time: 45 days Sequencing time: 9 days
Comments:	

Most Closely Related Viruses									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	O/BHU/10/2009	BHU09-10	639	639	0	100	0	ME-SA	unnamed
2	O/BHU/9/2009	BHU09-09	639	639	0	100	0	ME-SA	unnamed
3	O/BHU/18/2009	BHU09-18	639	638	0	99.84	0.16	ME-SA	unnamed
4	O/BHU/2/2009	BHU09-02	639	638	0	99.84	0.16	ME-SA	unnamed
5	O/BHU/4/2009	BHU09-04	639	638	0	99.84	0.16	ME-SA	unnamed
6	O/BHU/5/2009	BHU09-05	639	638	0	99.84	0.16	ME-SA	unnamed
7	O/BHU/6/2009	BHU09-06	639	638	0	99.84	0.16	ME-SA	unnamed
8	O/BAN/26/2009	BAN09-26	639	637	0	99.69	0.31	ME-SA	unnamed
9	O/BAN/27/2009	BAN09-27	639	637	0	99.69	0.31	ME-SA	unnamed
10	O/BHU/19/2009	BHU09-19	639	637	0	99.69	0.31	ME-SA	unnamed
Most Closely Related Reference Viruses									
(see http://www.wrlfmd.org/fmd_genotyping/prototypes.htm)									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	O/UKG/35/2001 (AJ539141)	UKG01-35	639	573	0	89.67	10.33	ME-SA	PanAsia
2	O/IRN/8/2005	IRN05-08	639	570	0	89.2	10.8	ME-SA	PanAsia-2
3	O/IND/53/79 (AF292107)	IND79A53	639	565	0	88.42	11.58	ME-SA	unnamed
4	O1/Manisa/TUR/69 (AY593823)	TUR69--G	639	564	0	88.26	11.74	ME-SA	unnamed
5	O/IND/R2/75* (AF204276)	IND75--A	639	556	0	87.01	12.99	ME-SA	unnamed
6	O/SUD/2/86 (DQ165075)	SUD86-02	639	554	0	86.7	13.3	EA-3	unnamed
7	O/K40/84*	KEN84-40	639	553	0	86.54	13.46	EA-1	unnamed
8	O/ETH/1/2007 (FJ798137)	ETH07-01	639	552	0	86.38	13.62	EA-3	unnamed
9	O/TAI/189/87* (TRRL)	TAI87-AC	639	549	0	85.92	14.08	SEA	unnamed
10	O/KEN/5/2002 (DQ165073)	KEN02-05	639	542	0	84.82	15.18	EA-2	unnamed
nt, nucleotides *, not a WRLFMD reference number									

WRLFMD Genotyping Report Form

Serotype: O WRLFMD Ref No: BHU/9/2009 Batch No: WRLFMD/2009/00055 Sender Ref: 381-5 Location: Damchoe, Gasa, Bhutan Date collected: 03/07/2009 Date received by WRLFMD: 07/12/2009 Date received for sequencing: 12/01/2010 Species: Cattle Material used: BTy1 Region sequenced: VP1 RT-PCR primers: O-1C244F/EUR-2B52R O-1C272F/EUR-2B52R	Report date: 21/01/2010 Reported by: N.J. Knowles Checked by: D.P. King Topotype: ME-SA Genotype/strain: Unnamed Sequence filename: BHU09-09.SEQ Date sequence last updated: 19/01/2010 No. of Nt determined: 639 No. of ambiguities: 0 Gene length: 639 Total no. of comparisons: 2224 Min. no. of nt for comparison: 300 Total turn-around time: 45 days Sequencing time: 9 days
Comments:	

Most Closely Related Viruses									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	O/BHU/10/2009	BHU09-10	639	639	0	100	0	ME-SA	unnamed
2	O/BHU/8/2009	BHU09-08	639	639	0	100	0	ME-SA	unnamed
3	O/BHU/18/2009	BHU09-18	639	638	0	99.84	0.16	ME-SA	unnamed
4	O/BHU/2/2009	BHU09-02	639	638	0	99.84	0.16	ME-SA	unnamed
5	O/BHU/4/2009	BHU09-04	639	638	0	99.84	0.16	ME-SA	unnamed
6	O/BHU/5/2009	BHU09-05	639	638	0	99.84	0.16	ME-SA	unnamed
7	O/BHU/6/2009	BHU09-06	639	638	0	99.84	0.16	ME-SA	unnamed
8	O/BAN/26/2009	BAN09-26	639	637	0	99.69	0.31	ME-SA	unnamed
9	O/BAN/27/2009	BAN09-27	639	637	0	99.69	0.31	ME-SA	unnamed
10	O/BHU/19/2009	BHU09-19	639	637	0	99.69	0.31	ME-SA	unnamed
Most Closely Related Reference Viruses									
(see http://www.wrlfmd.org/fmd_genotyping/prototypes.htm)									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	O/UKG/35/2001 (AJ539141)	UKG01-35	639	573	0	89.67	10.33	ME-SA	PanAsia
2	O/IRN/8/2005	IRN05-08	639	570	0	89.2	10.8	ME-SA	PanAsia-2
3	O/IND/53/79 (AF292107)	IND79A53	639	565	0	88.42	11.58	ME-SA	unnamed
4	O1/Manisa/TUR/69 (AY593823)	TUR69--G	639	564	0	88.26	11.74	ME-SA	unnamed
5	O/IND/R2/75* (AF204276)	IND75--A	639	556	0	87.01	12.99	ME-SA	unnamed
6	O/SUD/2/86 (DQ165075)	SUD86-02	639	554	0	86.7	13.3	EA-3	unnamed
7	O/K40/84*	KEN84-40	639	553	0	86.54	13.46	EA-1	unnamed
8	O/ETH/1/2007 (FJ798137)	ETH07-01	639	552	0	86.38	13.62	EA-3	unnamed
9	O/TAI/189/87* (TRRL)	TAI87-AC	639	549	0	85.92	14.08	SEA	unnamed
10	O/KEN/5/2002 (DQ165073)	KEN02-05	639	542	0	84.82	15.18	EA-2	unnamed
nt, nucleotides *, not a WRLFMD reference number									

WRLFMD Genotyping Report Form

Serotype: O WRLFMD Ref No: BHU/10/2009 Batch No: WRLFMD/2009/00055 Sender Ref: 381-6 Location: Damchoe, Gasa, Bhutan Date collected: 03/07/2009 Date received by WRLFMD: 07/12/2009 Date received for sequencing: 12/01/2010 Species: Cattle Material used: BTy1 Region sequenced: VP1 RT-PCR primers: O-1C244F/EUR-2B52R O-1C272F/EUR-2B52R	Report date: 21/01/2010 Reported by: N.J. Knowles Checked by: D.P. King Topotype: ME-SA Genotype/strain: Unnamed Sequence filename: BHU09-10.SEQ Date sequence last updated: 19/01/2010 No. of Nt determined: 639 No. of ambiguities: 0 Gene length: 639 Total no. of comparisons: 2224 Min. no. of nt for comparison: 300 Total turn-around time: 45 days Sequencing time: 9 days
Comments:	

Most Closely Related Viruses									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	O/BHU/8/2009	BHU09-08	639	639	0	100	0	ME-SA	unnamed
2	O/BHU/9/2009	BHU09-09	639	639	0	100	0	ME-SA	unnamed
3	O/BHU/18/2009	BHU09-18	639	638	0	99.84	0.16	ME-SA	unnamed
4	O/BHU/2/2009	BHU09-02	639	638	0	99.84	0.16	ME-SA	unnamed
5	O/BHU/4/2009	BHU09-04	639	638	0	99.84	0.16	ME-SA	unnamed
6	O/BHU/5/2009	BHU09-05	639	638	0	99.84	0.16	ME-SA	unnamed
7	O/BHU/6/2009	BHU09-06	639	638	0	99.84	0.16	ME-SA	unnamed
8	O/BAN/26/2009	BAN09-26	639	637	0	99.69	0.31	ME-SA	unnamed
9	O/BAN/27/2009	BAN09-27	639	637	0	99.69	0.31	ME-SA	unnamed
10	O/BHU/19/2009	BHU09-19	639	637	0	99.69	0.31	ME-SA	unnamed
Most Closely Related Reference Viruses									
(see http://www.wrlfmd.org/fmd_genotyping/prototypes.htm)									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	O/UKG/35/2001 (AJ539141)	UKG01-35	639	573	0	89.67	10.33	ME-SA	PanAsia
2	O/IRN/8/2005	IRN05-08	639	570	0	89.2	10.8	ME-SA	PanAsia-2
3	O/IND/53/79 (AF292107)	IND79A53	639	565	0	88.42	11.58	ME-SA	unnamed
4	O1/Manisa/TUR/69 (AY593823)	TUR69--G	639	564	0	88.26	11.74	ME-SA	unnamed
5	O/IND/R2/75* (AF204276)	IND75--A	639	556	0	87.01	12.99	ME-SA	unnamed
6	O/SUD/2/86 (DQ165075)	SUD86-02	639	554	0	86.7	13.3	EA-3	unnamed
7	O/K40/84*	KEN84-40	639	553	0	86.54	13.46	EA-1	unnamed
8	O/ETH/1/2007 (FJ798137)	ETH07-01	639	552	0	86.38	13.62	EA-3	unnamed
9	O/TAI/189/87* (TRRL)	TAI87-AC	639	549	0	85.92	14.08	SEA	unnamed
10	O/KEN/5/2002 (DQ165073)	KEN02-05	639	542	0	84.82	15.18	EA-2	unnamed
nt, nucleotides *, not a WRLFMD reference number									

WRLFMD Genotyping Report Form

Serotype: O WRLFMD Ref No: BHU/16/2009 Batch No: WRLFMD/2009/00055 Sender Ref: 500-4 Location: Padamlal, Pradhan, Samtsi, Bhutan Date collected: 08/09/2009 Date received by WRLFMD: 07/12/2009 Date received for sequencing: 12/01/2010 Species: Cattle Material used: BTy2 Region sequenced: VP1 RT-PCR primers: O-1C244F/EUR-2B52R O-1C272F/EUR-2B52R	Report date: 21/01/2010 Reported by: N.J. Knowles Checked by: D.P. King Topotype: ME-SA Genotype/strain: Unnamed Sequence filename: BHU09-16.SEQ Date sequence last updated: 19/01/2010 No. of Nt determined: 639 No. of ambiguities: 0 Gene length: 639 Total no. of comparisons: 2224 Min. no. of nt for comparison: 300 Total turn-around time: 45 days Sequencing time: 9 days
Comments:	

Most Closely Related Viruses									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	O/BHU/18/2009	BHU09-18	639	636	0	99.53	0.47	ME-SA	unnamed
2	O/BHU/2/2009	BHU09-02	639	636	0	99.53	0.47	ME-SA	unnamed
3	O/BHU/3/2009	BHU09-03	639	636	0	99.53	0.47	ME-SA	unnamed
4	O/BHU/4/2009	BHU09-04	639	636	0	99.53	0.47	ME-SA	unnamed
5	O/BHU/5/2009	BHU09-05	639	636	0	99.53	0.47	ME-SA	unnamed
6	O/BHU/6/2009	BHU09-06	639	636	0	99.53	0.47	ME-SA	unnamed
7	O/BAN/26/2009	BAN09-26	639	635	0	99.37	0.63	ME-SA	unnamed
8	O/BAN/27/2009	BAN09-27	639	635	0	99.37	0.63	ME-SA	unnamed
9	O/BHU/10/2009	BHU09-10	639	635	0	99.37	0.63	ME-SA	unnamed
10	O/BHU/19/2009	BHU09-19	639	635	0	99.37	0.63	ME-SA	unnamed
Most Closely Related Reference Viruses									
(see http://www.wrlfmd.org/fmd_genotyping/prototypes.htm)									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	O/IRN/8/2005	IRN05-08	639	569	0	89.05	10.95	ME-SA	PanAsia-2
2	O/UKG/35/2001 (AJ539141)	UKG01-35	639	569	0	89.05	10.95	ME-SA	PanAsia
3	O/IND/53/79 (AF292107)	IND79A53	639	565	0	88.42	11.58	ME-SA	unnamed
4	O1/Manisa/TUR/69 (AY593823)	TUR69--G	639	560	0	87.64	12.36	ME-SA	unnamed
5	O/IND/R2/75* (AF204276)	IND75--A	639	556	0	87.01	12.99	ME-SA	unnamed
6	O/K40/84*	KEN84-40	639	555	0	86.85	13.15	EA-1	unnamed
7	O/SUD/2/86 (DQ165075)	SUD86-02	639	554	0	86.7	13.3	EA-3	unnamed
8	O/ETH/1/2007 (FJ798137)	ETH07-01	639	552	0	86.38	13.62	EA-3	unnamed
9	O/TAI/189/87* (TRRL)	TAI87-AC	639	547	0	85.6	14.4	SEA	unnamed
10	O/ETH/3/2004 (FJ798109)	ETH04-03	639	540	0	84.51	15.49	EA-3	unnamed
nt, nucleotides *, not a WRLFMD reference number									

WRLFMD Genotyping Report Form

Serotype: O WRLFMD Ref No: BHU/18/2009 Batch No: WRLFMD/2009/00055 Sender Ref: 500-7 Location: Banjara, Samtsi, Bhutan Date collected: 08/09/2009 Date received by WRLFMD: 07/12/2009 Date received for sequencing: 12/01/2010 Species: Cattle Material used: BTy1 Region sequenced: VP1 RT-PCR primers: O-1C244F/EUR-2B52R O-1C272F/EUR-2B52R	Report date: 21/01/2010 Reported by: N.J. Knowles Checked by: D.P. King Topotype: ME-SA Genotype/strain: Unnamed Sequence filename: BHU09-18.SEQ Date sequence last updated: 19/01/2010 No. of Nt determined: 639 No. of ambiguities: 0 Gene length: 639 Total no. of comparisons: 2224 Min. no. of nt for comparison: 300 Total turn-around time: 45 days Sequencing time: 9 days
Comments:	

Most Closely Related Viruses									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	O/BHU/2/2009	BHU09-02	639	639	0	100	0	ME-SA	unnamed
2	O/BHU/4/2009	BHU09-04	639	639	0	100	0	ME-SA	unnamed
3	O/BHU/5/2009	BHU09-05	639	639	0	100	0	ME-SA	unnamed
4	O/BHU/6/2009	BHU09-06	639	639	0	100	0	ME-SA	unnamed
5	O/BAN/26/2009	BAN09-26	639	638	0	99.84	0.16	ME-SA	unnamed
6	O/BAN/27/2009	BAN09-27	639	638	0	99.84	0.16	ME-SA	unnamed
7	O/BHU/10/2009	BHU09-10	639	638	0	99.84	0.16	ME-SA	unnamed
8	O/BHU/19/2009	BHU09-19	639	638	0	99.84	0.16	ME-SA	unnamed
9	O/BHU/8/2009	BHU09-08	639	638	0	99.84	0.16	ME-SA	unnamed
10	O/BHU/9/2009	BHU09-09	639	638	0	99.84	0.16	ME-SA	unnamed
Most Closely Related Reference Viruses									
(see http://www.wrlfmd.org/fmd_genotyping/prototypes.htm)									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	O/UKG/35/2001 (AJ539141)	UKG01-35	639	572	0	89.51	10.49	ME-SA	PanAsia
2	O/IRN/8/2005	IRN05-08	639	570	0	89.2	10.8	ME-SA	PanAsia-2
3	O/IND/53/79 (AF292107)	IND79A53	639	566	0	88.58	11.42	ME-SA	unnamed
4	O1/Manisa/TUR/69 (AY593823)	TUR69--G	639	563	0	88.11	11.89	ME-SA	unnamed
5	O/IND/R2/75* (AF204276)	IND75--A	639	557	0	87.17	12.83	ME-SA	unnamed
6	O/SUD/2/86 (DQ165075)	SUD86-02	639	555	0	86.85	13.15	EA-3	unnamed
7	O/K40/84*	KEN84-40	639	554	0	86.7	13.3	EA-1	unnamed
8	O/ETH/1/2007 (FJ798137)	ETH07-01	639	553	0	86.54	13.46	EA-3	unnamed
9	O/TAI/189/87* (TRRL)	TAI87-AC	639	548	0	85.76	14.24	SEA	unnamed
10	O/ETH/3/2004 (FJ798109)	ETH04-03	639	541	0	84.66	15.34	EA-3	unnamed
nt, nucleotides *, not a WRLFMD reference number									

WRLFMD Genotyping Report Form

Serotype: O WRLFMD Ref No: BHU/19/2009 Batch No: WRLFMD/2009/00055 Sender Ref: 500-8 Location: Banjara, Samtsi, Bhutan Date collected: 08/09/2009 Date received by WRLFMD: 07/12/2009 Date received for sequencing: 12/01/2010 Species: Cattle Material used: BTy2 Region sequenced: VP1 RT-PCR primers: O-1C244F/EUR-2B52R O-1C272F/EUR-2B52R	Report date: 21/01/2010 Reported by: N.J. Knowles Checked by: D.P. King Topotype: ME-SA Genotype/strain: Unnamed Sequence filename: BHU09-19.SEQ Date sequence last updated: 19/01/2010 No. of Nt determined: 639 No. of ambiguities: 0 Gene length: 639 Total no. of comparisons: 2224 Min. no. of nt for comparison: 300 Total turn-around time: 45 days Sequencing time: 9 days
Comments:	

Most Closely Related Viruses									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	O/BHU/18/2009	BHU09-18	639	638	0	99.84	0.16	ME-SA	unnamed
2	O/BHU/2/2009	BHU09-02	639	638	0	99.84	0.16	ME-SA	unnamed
3	O/BHU/4/2009	BHU09-04	639	638	0	99.84	0.16	ME-SA	unnamed
4	O/BHU/5/2009	BHU09-05	639	638	0	99.84	0.16	ME-SA	unnamed
5	O/BHU/6/2009	BHU09-06	639	638	0	99.84	0.16	ME-SA	unnamed
6	O/BAN/26/2009	BAN09-26	639	637	0	99.69	0.31	ME-SA	unnamed
7	O/BAN/27/2009	BAN09-27	639	637	0	99.69	0.31	ME-SA	unnamed
8	O/BHU/10/2009	BHU09-10	639	637	0	99.69	0.31	ME-SA	unnamed
9	O/BHU/8/2009	BHU09-08	639	637	0	99.69	0.31	ME-SA	unnamed
10	O/BHU/9/2009	BHU09-09	639	637	0	99.69	0.31	ME-SA	unnamed
Most Closely Related Reference Viruses									
(see http://www.wrlfmd.org/fmd_genotyping/prototypes.htm)									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	O/UKG/35/2001 (AJ539141)	UKG01-35	639	571	0	89.36	10.64	ME-SA	PanAsia
2	O/IRN/8/2005	IRN05-08	639	569	0	89.05	10.95	ME-SA	PanAsia-2
3	O/IND/53/79 (AF292107)	IND79A53	639	565	0	88.42	11.58	ME-SA	unnamed
4	O1/Manisa/TUR/69 (AY593823)	TUR69--G	639	562	0	87.95	12.05	ME-SA	unnamed
5	O/IND/R2/75* (AF204276)	IND75--A	639	556	0	87.01	12.99	ME-SA	unnamed
6	O/ETH/1/2007 (FJ798137)	ETH07-01	639	554	0	86.7	13.3	EA-3	unnamed
7	O/SUD/2/86 (DQ165075)	SUD86-02	639	554	0	86.7	13.3	EA-3	unnamed
8	O/K40/84*	KEN84-40	639	553	0	86.54	13.46	EA-1	unnamed
9	O/TAI/189/87* (TRRL)	TAI87-AC	639	547	0	85.6	14.4	SEA	unnamed
10	O/ETH/3/2004 (FJ798109)	ETH04-03	639	540	0	84.51	15.49	EA-3	unnamed
nt, nucleotides *, not a WRLFMD reference number									

WRLFMD Genotyping Report Form

Serotype: O	Report date: 21/01/2010
WRLFMD Ref No: BHU/20/2009	Reported by: N.J. Knowles
Batch No: WRLFMD/2009/00055	Checked by: D.P. King
Sender Ref: 607-1	
Location: Passang, Dawa, Chukha, Bhutan	Topotype: ME-SA
Date collected: 05/11/2009	Genotype/strain: Unnamed
Date received by WRLFMD: 07/12/2009	Sequence filename: BHU09-20.SEQ
Date received for sequencing: 12/01/2010	Date sequence last updated: 19/01/2010
Species: Cattle	No. of Nt determined: 639
Material used: BTy1	No. of ambiguities: 0
Region sequenced: VP1	Gene length: 639
RT-PCR primers: O-1C244F/EUR-2B52R	Total no. of comparisons: 2224
O-1C272F/EUR-2B52R	Min. no. of nt for comparison: 300
	Total turn-around time: 45 days
	Sequencing time: 9 days
Comments:	

Most Closely Related Viruses									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	O/BHU/26/2009	BHU09-26	639	637	0	99.69	0.31	ME-SA	unnamed
2	O/BHU/23/2009	BHU09-23	639	636	0	99.53	0.47	ME-SA	unnamed
3	O/BHU/25/2009	BHU09-25	639	636	0	99.53	0.47	ME-SA	unnamed
4	O/BHU/18/2009	BHU09-18	639	635	0	99.37	0.63	ME-SA	unnamed
5	O/BHU/2/2009	BHU09-02	639	635	0	99.37	0.63	ME-SA	unnamed
6	O/BHU/4/2009	BHU09-04	639	635	0	99.37	0.63	ME-SA	unnamed
7	O/BHU/5/2009	BHU09-05	639	635	0	99.37	0.63	ME-SA	unnamed
8	O/BHU/6/2009	BHU09-06	639	635	0	99.37	0.63	ME-SA	unnamed
9	O/BAN/26/2009	BAN09-26	639	634	0	99.22	0.78	ME-SA	unnamed
10	O/BAN/27/2009	BAN09-27	639	634	0	99.22	0.78	ME-SA	unnamed
Most Closely Related Reference Viruses									
(see http://www.wrlfmd.org/fmd_genotyping/prototypes.htm)									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	O/IRN/8/2005	IRN05-08	639	570	0	89.2	10.8	ME-SA	PanAsia-2
2	O/UKG/35/2001 (AJ539141)	UKG01-35	639	570	0	89.2	10.8	ME-SA	PanAsia
3	O/IND/53/79 (AF292107)	IND79A53	639	564	0	88.26	11.74	ME-SA	unnamed
4	O1/Manisa/TUR/69 (AY593823)	TUR69--G	639	563	0	88.11	11.89	ME-SA	unnamed
5	O/IND/R2/75* (AF204276)	IND75--A	639	555	0	86.85	13.15	ME-SA	unnamed
6	O/SUD/2/86 (DQ165075)	SUD86-02	639	553	0	86.54	13.46	EA-3	unnamed
7	O/K40/84*	KEN84-40	639	552	0	86.38	13.62	EA-1	unnamed
8	O/ETH/1/2007 (FJ798137)	ETH07-01	639	551	0	86.23	13.77	EA-3	unnamed
9	O/TAI/189/87* (TRRL)	TAI87-AC	639	546	0	85.45	14.55	SEA	unnamed
10	O/ETH/3/2004 (FJ798109)	ETH04-03	639	539	0	84.35	15.65	EA-3	unnamed
nt, nucleotides									
*, not a WRLFMD reference number									

WRLFMD Genotyping Report Form

Serotype: O WRLFMD Ref No: BHU/23/2009 Batch No: WRLFMD/2009/00055 Sender Ref: 630-1 Location: Deki, Wangdue, Bhutan Date collected: 23/11/2009 Date received by WRLFMD: 07/12/2009 Date received for sequencing: 12/01/2010 Species: Cattle Material used: BTy1 Region sequenced: VP1 RT-PCR primers: O-1C244F/EUR-2B52R O-1C272F/EUR-2B52R	Report date: 21/01/2010 Reported by: N.J. Knowles Checked by: D.P. King Topotype: ME-SA Genotype/strain: Unnamed Sequence filename: BHU09-23.SEQ Date sequence last updated: 20/01/2010 No. of Nt determined: 639 No. of ambiguities: 0 Gene length: 639 Total no. of comparisons: 2224 Min. no. of nt for comparison: 300 Total turn-around time: 45 days Sequencing time: 9 days
Comments:	

Most Closely Related Viruses									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	O/BHU/26/2009	BHU09-26	639	638	0	99.84	0.16	ME-SA	unnamed
2	O/BHU/25/2009	BHU09-25	639	637	0	99.69	0.31	ME-SA	unnamed
3	O/BHU/18/2009	BHU09-18	639	636	0	99.53	0.47	ME-SA	unnamed
4	O/BHU/2/2009	BHU09-02	639	636	0	99.53	0.47	ME-SA	unnamed
5	O/BHU/20/2009	BHU09-20	639	636	0	99.53	0.47	ME-SA	unnamed
6	O/BHU/4/2009	BHU09-04	639	636	0	99.53	0.47	ME-SA	unnamed
7	O/BHU/5/2009	BHU09-05	639	636	0	99.53	0.47	ME-SA	unnamed
8	O/BHU/6/2009	BHU09-06	639	636	0	99.53	0.47	ME-SA	unnamed
9	O/BAN/26/2009	BAN09-26	639	635	0	99.37	0.63	ME-SA	unnamed
10	O/BAN/27/2009	BAN09-27	639	635	0	99.37	0.63	ME-SA	unnamed
Most Closely Related Reference Viruses									
(see http://www.wrlfmd.org/fmd_genotyping/prototypes.htm)									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	O/IRN/8/2005	IRN05-08	639	573	0	89.67	10.33	ME-SA	PanAsia-2
2	O/UKG/35/2001 (AJ539141)	UKG01-35	639	573	0	89.67	10.33	ME-SA	PanAsia
3	O/IND/53/79 (AF292107)	IND79A53	639	567	0	88.73	11.27	ME-SA	unnamed
4	O1/Manisa/TUR/69 (AY593823)	TUR69--G	639	566	0	88.58	11.42	ME-SA	unnamed
5	O/IND/R2/75* (AF204276)	IND75--A	639	558	0	87.32	12.68	ME-SA	unnamed
6	O/K40/84*	KEN84-40	639	555	0	86.85	13.15	EA-1	unnamed
7	O/ETH/1/2007 (FJ798137)	ETH07-01	639	554	0	86.7	13.3	EA-3	unnamed
8	O/SUD/2/86 (DQ165075)	SUD86-02	639	554	0	86.7	13.3	EA-3	unnamed
9	O/TAI/189/87* (TRRL)	TAI87-AC	639	549	0	85.92	14.08	SEA	unnamed
10	O/ETH/3/2004 (FJ798109)	ETH04-03	639	542	0	84.82	15.18	EA-3	unnamed
nt, nucleotides *, not a WRLFMD reference number									

WRLFMD Genotyping Report Form

Serotype: O WRLFMD Ref No: BHU/25/2009 Batch No: WRLFMD/2009/00055 Sender Ref: 630-3 Location: Lham, Wangdue, Bhutan Date collected: 23/11/2009 Date received by WRLFMD: 07/12/2009 Date received for sequencing: 12/01/2010 Species: Cattle Material used: BTy1 Region sequenced: VP1 RT-PCR primers: O-1C244F/EUR-2B52R O-1C272F/EUR-2B52R	Report date: 21/01/2010 Reported by: N.J. Knowles Checked by: D.P. King Topotype: ME-SA Genotype/strain: Unnamed Sequence filename: BHU09-25.SEQ Date sequence last updated: 20/01/2010 No. of Nt determined: 639 No. of ambiguities: 0 Gene length: 639 Total no. of comparisons: 2224 Min. no. of nt for comparison: 300 Total turn-around time: 45 days Sequencing time: 9 days
Comments:	

Most Closely Related Viruses									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	O/BHU/26/2009	BHU09-26	639	638	0	99.84	0.16	ME-SA	unnamed
2	O/BHU/23/2009	BHU09-23	639	637	0	99.69	0.31	ME-SA	unnamed
3	O/BHU/18/2009	BHU09-18	639	636	0	99.53	0.47	ME-SA	unnamed
4	O/BHU/2/2009	BHU09-02	639	636	0	99.53	0.47	ME-SA	unnamed
5	O/BHU/20/2009	BHU09-20	639	636	0	99.53	0.47	ME-SA	unnamed
6	O/BHU/4/2009	BHU09-04	639	636	0	99.53	0.47	ME-SA	unnamed
7	O/BHU/5/2009	BHU09-05	639	636	0	99.53	0.47	ME-SA	unnamed
8	O/BHU/6/2009	BHU09-06	639	636	0	99.53	0.47	ME-SA	unnamed
9	O/BAN/26/2009	BAN09-26	639	635	0	99.37	0.63	ME-SA	unnamed
10	O/BAN/27/2009	BAN09-27	639	635	0	99.37	0.63	ME-SA	unnamed
Most Closely Related Reference Viruses									
(see http://www.wrlfmd.org/fmd_genotyping/prototypes.htm)									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	O/IRN/8/2005	IRN05-08	639	571	0	89.36	10.64	ME-SA	PanAsia-2
2	O/UKG/35/2001 (AJ539141)	UKG01-35	639	571	0	89.36	10.64	ME-SA	PanAsia
3	O/IND/53/79 (AF292107)	IND79A53	639	565	0	88.42	11.58	ME-SA	unnamed
4	O1/Manisa/TUR/69 (AY593823)	TUR69--G	639	564	0	88.26	11.74	ME-SA	unnamed
5	O/IND/R2/75* (AF204276)	IND75--A	639	556	0	87.01	12.99	ME-SA	unnamed
6	O/SUD/2/86 (DQ165075)	SUD86-02	639	554	0	86.7	13.3	EA-3	unnamed
7	O/K40/84*	KEN84-40	639	553	0	86.54	13.46	EA-1	unnamed
8	O/ETH/1/2007 (FJ798137)	ETH07-01	639	552	0	86.38	13.62	EA-3	unnamed
9	O/TAI/189/87* (TRRL)	TAI87-AC	639	547	0	85.6	14.4	SEA	unnamed
10	O/K83/79* (AJ303511)	KEN79B83	638	541	1	84.8	15.2	EA-1	unnamed
nt, nucleotides *, not a WRLFMD reference number									

WRLFMD Genotyping Report Form

Serotype: O WRLFMD Ref No: BHU/26/2009 Batch No: WRLFMD/2009/00055 Sender Ref: 630-4 Location: Chimi Om, Wangdue, Bhutan Date collected: 23/11/2009 Date received by WRLFMD: 07/12/2009 Date received for sequencing: 12/01/2010 Species: Cattle Material used: BTy1 Region sequenced: VP1 RT-PCR primers: O-1C244F/EUR-2B52R O-1C272F/EUR-2B52R	Report date: 21/01/2010 Reported by: N.J. Knowles Checked by: D.P. King Topotype: ME-SA Genotype/strain: Unnamed Sequence filename: BHU09-26.SEQ Date sequence last updated: 20/01/2010 No. of Nt determined: 639 No. of ambiguities: 0 Gene length: 639 Total no. of comparisons: 2224 Min. no. of nt for comparison: 300 Total turn-around time: 45 days Sequencing time: 9 days
Comments:	

Most Closely Related Viruses									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	O/BHU/23/2009	BHU09-23	639	638	0	99.84	0.16	ME-SA	unnamed
2	O/BHU/25/2009	BHU09-25	639	638	0	99.84	0.16	ME-SA	unnamed
3	O/BHU/18/2009	BHU09-18	639	637	0	99.69	0.31	ME-SA	unnamed
4	O/BHU/2/2009	BHU09-02	639	637	0	99.69	0.31	ME-SA	unnamed
5	O/BHU/20/2009	BHU09-20	639	637	0	99.69	0.31	ME-SA	unnamed
6	O/BHU/4/2009	BHU09-04	639	637	0	99.69	0.31	ME-SA	unnamed
7	O/BHU/5/2009	BHU09-05	639	637	0	99.69	0.31	ME-SA	unnamed
8	O/BHU/6/2009	BHU09-06	639	637	0	99.69	0.31	ME-SA	unnamed
9	O/BAN/26/2009	BAN09-26	639	636	0	99.53	0.47	ME-SA	unnamed
10	O/BAN/27/2009	BAN09-27	639	636	0	99.53	0.47	ME-SA	unnamed
Most Closely Related Reference Viruses									
(see http://www.wrlfmd.org/fmd_genotyping/prototypes.htm)									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	O/IRN/8/2005	IRN05-08	639	572	0	89.51	10.49	ME-SA	PanAsia-2
2	O/UKG/35/2001 (AJ539141)	UKG01-35	639	572	0	89.51	10.49	ME-SA	PanAsia
3	O/IND/53/79 (AF292107)	IND79A53	639	566	0	88.58	11.42	ME-SA	unnamed
4	O1/Manisa/TUR/69 (AY593823)	TUR69--G	639	565	0	88.42	11.58	ME-SA	unnamed
5	O/IND/R2/75* (AF204276)	IND75--A	639	557	0	87.17	12.83	ME-SA	unnamed
6	O/SUD/2/86 (DQ165075)	SUD86-02	639	555	0	86.85	13.15	EA-3	unnamed
7	O/K40/84*	KEN84-40	639	554	0	86.7	13.3	EA-1	unnamed
8	O/ETH/1/2007 (FJ798137)	ETH07-01	639	553	0	86.54	13.46	EA-3	unnamed
9	O/TAI/189/87* (TRRL)	TAI87-AC	639	548	0	85.76	14.24	SEA	unnamed
10	O/ETH/3/2004 (FJ798109)	ETH04-03	639	541	0	84.66	15.34	EA-3	unnamed
nt, nucleotides *, not a WRLFMD reference number									

Report on FMDV O in Bhutan in 2009

Batches: WRLFMD/2009/00055

Software: MEGA 4.0

No. of Taxa : 293

Data File : n:\evd\meg\db\fmv\o\BHU2009a.meg

Data Title : O Bhutan 2009

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 : 639

No Of Bootstrap Reps = 1000

Only bootstrap values of 70% and above are shown

*, not a WRLFMD Ref. No.

N.J. Knowles & J. Wadsworth, 25 January 2010

