



INSTITUTE FOR ANIMAL HEALTH
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FMD Sequencing Report

Lab Reference WRL Batch Number: WRLFMD/2010/00035
Sender Details: 

Date Received: 5th November 2010
Country of Origin: Vietnam
Date Reported: 29th November 2010

Dear Dr. Nguyen Xuan Binh,

Re.: Serotype O

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/>

Please note one of these samples was collected more than six months ago.

Results Approved By: 

Official Stamp: 

Date: 30/11/10

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)

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

Genotyping Report

Report Date for this Batch: 17 November 2010

FMDV type O

Country: Vietnam

Period: 2010

No. of isolates: 12

BATCH: WRLFMD/2010/00035



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Serotype: O	Report date: 17/11/2010
WRLFMD Ref No: VIT/2/2010	Reported by: N.J. Knowles
Batch No: WRLFMD/2010/00035	Checked by: D.P. King
Sender Ref: 10-NCVD02 (NCVDB)	
Location: Son La, Vietnam	Topotype: SEA
Date collected: 01/02/2010	Genotype/strain: Mya-98
Date received by WRLFMD: 05/11/2010	Sequence filename: VIT10-02.SEQ
Date received for sequencing: 12/11/2010	Date sequence last updated: 17/11/2010
Species: Cattle	No. of Nt determined: 639
Material used: BHK BTy1	No. of ambiguities: 0
Region sequenced: VP1	Gene length: 639
RT-PCR primers: O-1C244F/EUR-2B52R	Total no. of comparisons: 2476
O-1C272F/EUR-2B52R	Min. no. of nt for comparison: 600
	Total turn-around time: 12 days
	Sequencing time: 5 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/TAI/19/2009 (HQ116266)	TAI09-19	639	637	0	99.69	0.31	SEA	Mya-98
2	O/MAY/20/2009 (HQ116218)	MAY09-20	639	636	0	99.53	0.47	SEA	Mya-98
3	O/MAY/21/2009 (HQ116219)	MAY09-21	639	636	0	99.53	0.47	SEA	Mya-98
4	O/TAI/13/2009 (HQ116261)	TAI09-13	639	636	0	99.53	0.47	SEA	Mya-98
5	O/TAI/15/2009 (HQ116262)	TAI09-15	639	636	0	99.53	0.47	SEA	Mya-98
6	O/TAI/16/2009 (HQ116263)	TAI09-16	639	636	0	99.53	0.47	SEA	Mya-98
7	O/TAI/17/2009 (HQ116264)	TAI09-17	639	636	0	99.53	0.47	SEA	Mya-98
8	O/TAI/23/2009 (HQ116270)	TAI09-23	639	636	0	99.53	0.47	SEA	Mya-98
9	O/TAI/12/2009 (HQ116260)	TAI09-12	639	634	0	99.22	0.78	SEA	Mya-98
10	O/MOG/2/2010	MOG10-02	639	632	0	98.90	1.10	SEA	Mya-98
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/MYA/7/98 (DQ164925)	MYA98-07	639	585	0	91.55	8.45	SEA	Mya-98
2	O/TAI/189/87* (TRRL)	TAI87-AC	639	565	0	88.42	11.58	SEA	unnamed
3	O/IND/R2/75* (AF204276)	IND75--A	639	547	0	85.60	14.40	ME-SA	unnamed
4	O/PAK/16/2003 (DQ165068)	PAK03-16	639	547	0	85.60	14.40	ME-SA	Pak-98
5	O1/Manisa/TUR/69 (AY593823)	TUR69--G	639	545	0	85.29	14.71	ME-SA	unnamed
6	O/TUR/264/2009* (FMDI)	TUR09-AK	639	542	0	84.82	15.18	ME-SA	PanAsia-2 ^{SAN-09}
7	O/TUR/257/2008* (FMDI)	TUR08-AD	639	541	0	84.66	15.34	ME-SA	PanAsia-2 ^{TER-08}
8	O/CAM/3/98 (AJ294910)	CAM98-03	639	540	0	84.51	15.49	SEA	Cam-94
9	O/IND/53/79 (AF292107)	IND79A53	639	538	0	84.19	15.81	ME-SA	unnamed
10	O/IRN/31/2009	IRN09-31	639	538	0	84.19	15.81	ME-SA	PanAsia-2 ^{FAR-09}

nt, nucleotides

*, not a WRLFMD reference number

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Serotype: O	Report date: 17/11/2010
WRLFMD Ref No: VIT/3/2010	Reported by: N.J. Knowles
Batch No: WRLFMD/2010/00035	Checked by: D.P. King
Sender Ref: 10-6835	
Location: Ho Chi Minh City, Vietnam	Topotype: ME-SA
Date collected: 21/09/2010	Genotype/strain: PanAsia
Date received by WRLFMD: 05/11/2010	Sequence filename: VIT10-03.SEQ
Date received for sequencing: 12/11/2010	Date sequence last updated: 17/11/2010
Species: Pig	No. of Nt determined: 639
Material used: BHK RS1	No. of ambiguities: 0
Region sequenced: VP1	Gene length: 639
RT-PCR primers: O-1C244F/EUR-2B52R	Total no. of comparisons: 2476
O-1C272F/EUR-2B52R	Min. no. of nt for comparison: 600
	Total turn-around time: 12 days
	Sequencing time: 5 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/VIT/7/2010	VIT10-07	639	638	0	99.84	0.16	ME-SA	PanAsia
2	O/VIT/8/2010	VIT10-08	639	638	0	99.84	0.16	ME-SA	PanAsia
3	O/VIT/10/2010	VIT10-10	639	637	0	99.69	0.31	ME-SA	PanAsia
4	O/VIT/11/2010	VIT10-11	639	637	0	99.69	0.31	ME-SA	PanAsia
5	O/VIT/13/2010	VIT10-13	639	637	0	99.69	0.31	ME-SA	PanAsia
6	O/VIT/4/2010	VIT10-04	639	636	0	99.53	0.47	ME-SA	PanAsia
7	O/VIT/6/2010	VIT10-06	639	636	0	99.53	0.47	ME-SA	PanAsia
8	O/VIT/9/2010	VIT10-09	639	636	0	99.53	0.47	ME-SA	PanAsia
9	O/VIT/12/2010	VIT10-12	639	635	0	99.37	0.63	ME-SA	PanAsia
10	O/VIT/17/2005 (HQ116283)	VIT05-17	639	614	0	96.09	3.91	ME-SA	PanAsia
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	600	0	93.90	6.10	ME-SA	PanAsia
2	O/KUW/3/97 (DQ164904)	KUW97-03	639	586	0	91.71	8.29	ME-SA	Ind-2001a
3	O/IRN/31/2009	IRN09-31	639	585	0	91.55	8.45	ME-SA	PanAsia-2 ^{FAR-09}
4	O/IRN/8/2005	IRN05-08	639	585	0	91.55	8.45	ME-SA	PanAsia-2
5	O/IRN/18/2010	IRN10-18	639	584	0	91.39	8.61	ME-SA	PanAsia-2 ^{BAL-09}
6	O/OMN/7/2001 (DQ164941)	OMN01-07	639	580	0	90.77	9.23	ME-SA	Ind-2001b
7	O/BHU/3/2009	BHU09-03	639	578	0	90.45	9.55	ME-SA	Ind-2001d
8	O/UAE/4/2008	UAE08-04	636	574	0	90.25	9.75	ME-SA	Ind-2001c
9	O/IRN/88/2009	IRN09-88	639	576	0	90.14	9.86	ME-SA	PanAsia-2 ^{ANT-10}
10	O/PAK/16/2010	PAK10-16	639	576	0	90.14	9.86	ME-SA	PanAsia-2 ^{PUN-10}

nt, nucleotides

*, not a WRLFMD reference number

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Serotype: O	Report date: 17/11/2010
WRLFMD Ref No: VIT/4/2010	Reported by: N.J. Knowles
Batch No: WRLFMD/2010/00035	Checked by: D.P. King
Sender Ref: 10-7032	
Location: Bin Phuoc, Vietnam	Topotype: ME-SA
Date collected: 27/09/2010	Genotype/strain: PanAsia
Date received by WRLFMD: 05/11/2010	Sequence filename: VIT10-04.SEQ
Date received for sequencing: 12/11/2010	Date sequence last updated: 17/11/2010
Species: Cattle	No. of Nt determined: 639
Material used: BHK BTy1	No. of ambiguities: 0
Region sequenced: VP1	Gene length: 639
RT-PCR primers: O-1C244F/EUR-2B52R	Total no. of comparisons: 2476
O-1C272F/EUR-2B52R	Min. no. of nt for comparison: 600
	Total turn-around time: 12 days
	Sequencing time: 5 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/VIT/7/2010	VIT10-07	639	637	0	99.69	0.31	ME-SA	PanAsia
2	O/VIT/8/2010	VIT10-08	639	637	0	99.69	0.31	ME-SA	PanAsia
3	O/VIT/10/2010	VIT10-10	639	636	0	99.53	0.47	ME-SA	PanAsia
4	O/VIT/11/2010	VIT10-11	639	636	0	99.53	0.47	ME-SA	PanAsia
5	O/VIT/13/2010	VIT10-13	639	636	0	99.53	0.47	ME-SA	PanAsia
6	O/VIT/3/2010	VIT10-03	639	636	0	99.53	0.47	ME-SA	PanAsia
7	O/VIT/6/2010	VIT10-06	639	635	0	99.37	0.63	ME-SA	PanAsia
8	O/VIT/9/2010	VIT10-09	639	635	0	99.37	0.63	ME-SA	PanAsia
9	O/VIT/12/2010	VIT10-12	639	634	0	99.22	0.78	ME-SA	PanAsia
10	O/VIT/17/2005 (HQ116283)	VIT05-17	639	613	0	95.93	4.07	ME-SA	PanAsia
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	601	0	94.05	5.95	ME-SA	PanAsia
2	O/IRN/8/2005	IRN05-08	639	588	0	92.02	7.98	ME-SA	PanAsia-2
3	O/KUW/3/97 (DQ164904)	KUW97-03	639	587	0	91.86	8.14	ME-SA	Ind-2001a
4	O/IRN/31/2009	IRN09-31	639	586	0	91.71	8.29	ME-SA	PanAsia-2 ^{FAR-09}
5	O/IRN/18/2010	IRN10-18	639	583	0	91.24	8.76	ME-SA	PanAsia-2 ^{BAL-09}
6	O/OMN/7/2001 (DQ164941)	OMN01-07	639	581	0	90.92	9.08	ME-SA	Ind-2001b
7	O/IRN/88/2009	IRN09-88	639	579	0	90.61	9.39	ME-SA	PanAsia-2 ^{ANT-10}
8	O/PAK/16/2010	PAK10-16	639	579	0	90.61	9.39	ME-SA	PanAsia-2 ^{PUN-10}
9	O/TUR/257/2008* (FMDI)	TUR08-AD	639	579	0	90.61	9.39	ME-SA	PanAsia-2 ^{TER-08}
10	O/TUR/264/2009* (FMDI)	TUR09-AK	639	578	0	90.45	9.55	ME-SA	PanAsia-2 ^{SAN-09}

nt, nucleotides

*, not a WRLFMD reference number

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Serotype: O	Report date: 17/11/2010
WRLFMD Ref No: VIT/5/2010	Reported by: N.J. Knowles
Batch No: WRLFMD/2010/00035	Checked by: D.P. King
Sender Ref: 1--NCVD03 (NCVDC)	
Location: Ha Tinh, Vietnam	Topotype: SEA
Date collected: 01/09/2010	Genotype/strain: Mya-98
Date received by WRLFMD: 05/11/2010	Sequence filename: VIT10-05.SEQ
Date received for sequencing: 12/11/2010	Date sequence last updated: 17/11/2010
Species: Pig	No. of Nt determined: 639
Material used: BHK RS1	No. of ambiguities: 0
Region sequenced: VP1	Gene length: 639
RT-PCR primers: O-1C244F/EUR-2B52R	Total no. of comparisons: 2476
O-1C272F/EUR-2B52R	Min. no. of nt for comparison: 600
	Total turn-around time: 12 days
	Sequencing time: 5 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/TAI/8/2005 (HQ116237)	TAI05-08	639	609	0	95.31	4.69	SEA	Mya-98
2	O/TAI/1/2005 (HQ116234)	TAI05-01	639	607	0	94.99	5.01	SEA	Mya-98
3	O/TAI/9/2007 (HQ116245)	TAI07-09	639	607	0	94.99	5.01	SEA	Mya-98
4	O/LAO/061/2007*	LAO07-AA	639	606	0	94.84	5.16	SEA	Mya-98
5	O/LAO/064/2007*	LAO07-AC	639	606	0	94.84	5.16	SEA	Mya-98
6	O/LAO/067/2007*	LAO07-AD	639	606	0	94.84	5.16	SEA	Mya-98
7	O/LAO/1/2007 (HQ116175)	LAO07-01	639	606	0	94.84	5.16	SEA	Mya-98
8	O/MAY/4/2007 (HQ116208)	MAY07-04	639	606	0	94.84	5.16	SEA	Mya-98
9	O/MAY/7/2007 (HQ116211)	MAY07-07	639	606	0	94.84	5.16	SEA	Mya-98
10	O/MAY/9/2007 (HQ116212)	MAY07-09	639	606	0	94.84	5.16	SEA	Mya-98
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/MYA/7/98 (DQ164925)	MYA98-07	639	592	0	92.64	7.36	SEA	Mya-98
2	O/TAI/189/87* (TRRL)	TAI87-AC	639	570	0	89.20	10.80	SEA	unnamed
3	O/IRN/31/2009	IRN09-31	639	548	0	85.76	14.24	ME-SA	PanAsia-2 ^{FAR-09}
4	O/IND/R2/75* (AF204276)	IND75--A	639	547	0	85.60	14.40	ME-SA	unnamed
5	O/UKG/35/2001 (AJ539141)	UKG01-35	639	546	0	85.45	14.55	ME-SA	PanAsia
6	O/IND/53/79 (AF292107)	IND79A53	639	545	0	85.29	14.71	ME-SA	unnamed
7	O/PAK/16/2010	PAK10-16	639	544	0	85.13	14.87	ME-SA	PanAsia-2 ^{PUN-10}
8	O/CAM/3/98 (AJ294910)	CAM98-03	639	541	0	84.66	15.34	SEA	Cam-94
9	O/IRN/8/2005	IRN05-08	639	541	0	84.66	15.34	ME-SA	PanAsia-2
10	O/PAK/16/2003 (DQ165068)	PAK03-16	639	540	0	84.51	15.49	ME-SA	Pak-98

nt, nucleotides

*, not a WRLFMD reference number

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Serotype: O	Report date: 17/11/2010
WRLFMD Ref No: VIT/6/2010	Reported by: N.J. Knowles
Batch No: WRLFMD/2010/00035	Checked by: D.P. King
Sender Ref: 10-7223	
Location: Long An, Vietnam	Topotype: ME-SA
Date collected: 01/10/2010	Genotype/strain: PanAsia
Date received by WRLFMD: 05/11/2010	Sequence filename: VIT10-06.SEQ
Date received for sequencing: 12/11/2010	Date sequence last updated: 17/11/2010
Species: Cattle	No. of Nt determined: 639
Material used: BHK BTy1	No. of ambiguities: 0
Region sequenced: VP1	Gene length: 639
RT-PCR primers: O-1C244F/EUR-2B52R	Total no. of comparisons: 2476
O-1C272F/EUR-2B52R	Min. no. of nt for comparison: 600
	Total turn-around time: 12 days
	Sequencing time: 5 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/VIT/7/2010	VIT10-07	639	637	0	99.69	0.31	ME-SA	PanAsia
2	O/VIT/8/2010	VIT10-08	639	637	0	99.69	0.31	ME-SA	PanAsia
3	O/VIT/10/2010	VIT10-10	639	636	0	99.53	0.47	ME-SA	PanAsia
4	O/VIT/11/2010	VIT10-11	639	636	0	99.53	0.47	ME-SA	PanAsia
5	O/VIT/13/2010	VIT10-13	639	636	0	99.53	0.47	ME-SA	PanAsia
6	O/VIT/3/2010	VIT10-03	639	636	0	99.53	0.47	ME-SA	PanAsia
7	O/VIT/4/2010	VIT10-04	639	635	0	99.37	0.63	ME-SA	PanAsia
8	O/VIT/9/2010	VIT10-09	639	635	0	99.37	0.63	ME-SA	PanAsia
9	O/VIT/12/2010	VIT10-12	639	634	0	99.22	0.78	ME-SA	PanAsia
10	O/VIT/17/2005 (HQ116283)	VIT05-17	639	613	0	95.93	4.07	ME-SA	PanAsia
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	599	0	93.74	6.26	ME-SA	PanAsia
2	O/KUW/3/97 (DQ164904)	KUW97-03	639	585	0	91.55	8.45	ME-SA	Ind-2001a
3	O/IRN/31/2009	IRN09-31	639	584	0	91.39	8.61	ME-SA	PanAsia-2 ^{FAR-09}
4	O/IRN/8/2005	IRN05-08	639	584	0	91.39	8.61	ME-SA	PanAsia-2
5	O/IRN/18/2010	IRN10-18	639	581	0	90.92	9.08	ME-SA	PanAsia-2 ^{BAL-09}
6	O/OMN/7/2001 (DQ164941)	OMN01-07	639	579	0	90.61	9.39	ME-SA	Ind-2001b
7	O/BHU/3/2009	BHU09-03	639	577	0	90.30	9.70	ME-SA	Ind-2001d
8	O/IRN/88/2009	IRN09-88	639	577	0	90.30	9.70	ME-SA	PanAsia-2 ^{ANT-10}
9	O/UAE/4/2008	UAE08-04	636	573	0	90.09	9.91	ME-SA	Ind-2001c
10	O/PAK/16/2010	PAK10-16	639	575	0	89.98	10.02	ME-SA	PanAsia-2 ^{PUN-10}

nt, nucleotides

*, not a WRLFMD reference number

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Serotype: O	Report date: 17/11/2010
WRLFMD Ref No: VIT/7/2010	Reported by: N.J. Knowles
Batch No: WRLFMD/2010/00035	Checked by: D.P. King
Sender Ref: 10-7230	
Location: Ba Ria-Vung Tau, Vietnam	Topotype: ME-SA
Date collected: 02/10/2010	Genotype/strain: PanAsia
Date received by WRLFMD: 05/11/2010	Sequence filename: VIT10-07.SEQ
Date received for sequencing: 12/11/2010	Date sequence last updated: 17/11/2010
Species: Cattle	No. of Nt determined: 639
Material used: BHK BTy1	No. of ambiguities: 0
Region sequenced: VP1	Gene length: 639
RT-PCR primers: O-1C244F/EUR-2B52R	Total no. of comparisons: 2476
O-1C272F/EUR-2B52R	Min. no. of nt for comparison: 600
	Total turn-around time: 12 days
	Sequencing time: 5 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/VIT/8/2010	VIT10-08	639	639	0	100.00	0.00	ME-SA	PanAsia
2	O/VIT/10/2010	VIT10-10	639	638	0	99.84	0.16	ME-SA	PanAsia
3	O/VIT/11/2010	VIT10-11	639	638	0	99.84	0.16	ME-SA	PanAsia
4	O/VIT/13/2010	VIT10-13	639	638	0	99.84	0.16	ME-SA	PanAsia
5	O/VIT/3/2010	VIT10-03	639	638	0	99.84	0.16	ME-SA	PanAsia
6	O/VIT/4/2010	VIT10-04	639	637	0	99.69	0.31	ME-SA	PanAsia
7	O/VIT/6/2010	VIT10-06	639	637	0	99.69	0.31	ME-SA	PanAsia
8	O/VIT/9/2010	VIT10-09	639	637	0	99.69	0.31	ME-SA	PanAsia
9	O/VIT/12/2010	VIT10-12	639	636	0	99.53	0.47	ME-SA	PanAsia
10	O/VIT/17/2005 (HQ116283)	VIT05-17	639	615	0	96.24	3.76	ME-SA	PanAsia
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	601	0	94.05	5.95	ME-SA	PanAsia
2	O/KUW/3/97 (DQ164904)	KUW97-03	639	587	0	91.86	8.14	ME-SA	Ind-2001a
3	O/IRN/31/2009	IRN09-31	639	586	0	91.71	8.29	ME-SA	PanAsia-2 ^{FAR-09}
4	O/IRN/8/2005	IRN05-08	639	586	0	91.71	8.29	ME-SA	PanAsia-2
5	O/IRN/18/2010	IRN10-18	639	583	0	91.24	8.76	ME-SA	PanAsia-2 ^{BAL-09}
6	O/OMN/7/2001 (DQ164941)	OMN01-07	639	581	0	90.92	9.08	ME-SA	Ind-2001b
7	O/BHU/3/2009	BHU09-03	639	579	0	90.61	9.39	ME-SA	Ind-2001d
8	O/UAE/4/2008	UAE08-04	636	575	0	90.41	9.59	ME-SA	Ind-2001c
9	O/IRN/88/2009	IRN09-88	639	577	0	90.30	9.70	ME-SA	PanAsia-2 ^{ANT-10}
10	O/PAK/16/2010	PAK10-16	639	577	0	90.30	9.70	ME-SA	PanAsia-2 ^{PUN-10}

nt, nucleotides

*, not a WRLFMD reference number

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Serotype: O	Report date: 17/11/2010
WRLFMD Ref No: VIT/8/2010	Reported by: N.J. Knowles
Batch No: WRLFMD/2010/00035	Checked by: D.P. King
Sender Ref: 10-7325	
Location: Khanh Hoa, Vietnam	Topotype: ME-SA
Date collected: 05/10/2010	Genotype/strain: PanAsia
Date received by WRLFMD: 05/11/2010	Sequence filename: VIT10-08.SEQ
Date received for sequencing: 12/11/2010	Date sequence last updated: 17/11/2010
Species: Cattle	No. of Nt determined: 639
Material used: BHK BTy1	No. of ambiguities: 0
Region sequenced: VP1	Gene length: 639
RT-PCR primers: O-1C244F/EUR-2B52R	Total no. of comparisons: 2476
O-1C272F/EUR-2B52R	Min. no. of nt for comparison: 600
	Total turn-around time: 12 days
	Sequencing time: 5 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/VIT/7/2010	VIT10-07	639	639	0	100.00	0.00	ME-SA	PanAsia
2	O/VIT/10/2010	VIT10-10	639	638	0	99.84	0.16	ME-SA	PanAsia
3	O/VIT/11/2010	VIT10-11	639	638	0	99.84	0.16	ME-SA	PanAsia
4	O/VIT/13/2010	VIT10-13	639	638	0	99.84	0.16	ME-SA	PanAsia
5	O/VIT/3/2010	VIT10-03	639	638	0	99.84	0.16	ME-SA	PanAsia
6	O/VIT/4/2010	VIT10-04	639	637	0	99.69	0.31	ME-SA	PanAsia
7	O/VIT/6/2010	VIT10-06	639	637	0	99.69	0.31	ME-SA	PanAsia
8	O/VIT/9/2010	VIT10-09	639	637	0	99.69	0.31	ME-SA	PanAsia
9	O/VIT/12/2010	VIT10-12	639	636	0	99.53	0.47	ME-SA	PanAsia
10	O/VIT/17/2005 (HQ116283)	VIT05-17	639	615	0	96.24	3.76	ME-SA	PanAsia
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	601	0	94.05	5.95	ME-SA	PanAsia
2	O/KUW/3/97 (DQ164904)	KUW97-03	639	587	0	91.86	8.14	ME-SA	Ind-2001a
3	O/IRN/31/2009	IRN09-31	639	586	0	91.71	8.29	ME-SA	PanAsia-2 ^{FAR-09}
4	O/IRN/8/2005	IRN05-08	639	586	0	91.71	8.29	ME-SA	PanAsia-2
5	O/IRN/18/2010	IRN10-18	639	583	0	91.24	8.76	ME-SA	PanAsia-2 ^{BAL-09}
6	O/OMN/7/2001 (DQ164941)	OMN01-07	639	581	0	90.92	9.08	ME-SA	Ind-2001b
7	O/BHU/3/2009	BHU09-03	639	579	0	90.61	9.39	ME-SA	Ind-2001d
8	O/UAE/4/2008	UAE08-04	636	575	0	90.41	9.59	ME-SA	Ind-2001c
9	O/IRN/88/2009	IRN09-88	639	577	0	90.30	9.70	ME-SA	PanAsia-2 ^{ANT-10}
10	O/PAK/16/2010	PAK10-16	639	577	0	90.30	9.70	ME-SA	PanAsia-2 ^{PUN-10}

nt, nucleotides

*, not a WRLFMD reference number

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Serotype: O	Report date: 17/11/2010
WRLFMD Ref No: VIT/9/2010	Reported by: N.J. Knowles
Batch No: WRLFMD/2010/00035	Checked by: D.P. King
Sender Ref: 10-7574	
Location: Ho Chi Minh City, Vietnam	Topotype: ME-SA
Date collected: 14/10/2010	Genotype/strain: PanAsia
Date received by WRLFMD: 05/11/2010	Sequence filename: VIT10-09.SEQ
Date received for sequencing: 12/11/2010	Date sequence last updated: 17/11/2010
Species: Cattle	No. of Nt determined: 639
Material used: BHK BTy1	No. of ambiguities: 0
Region sequenced: VP1	Gene length: 639
RT-PCR primers: O-1C244F/EUR-2B52R	Total no. of comparisons: 2476
O-1C272F/EUR-2B52R	Min. no. of nt for comparison: 600
	Total turn-around time: 12 days
	Sequencing time: 5 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/VIT/7/2010	VIT10-07	639	637	0	99.69	0.31	ME-SA	PanAsia
2	O/VIT/8/2010	VIT10-08	639	637	0	99.69	0.31	ME-SA	PanAsia
3	O/VIT/10/2010	VIT10-10	639	636	0	99.53	0.47	ME-SA	PanAsia
4	O/VIT/11/2010	VIT10-11	639	636	0	99.53	0.47	ME-SA	PanAsia
5	O/VIT/13/2010	VIT10-13	639	636	0	99.53	0.47	ME-SA	PanAsia
6	O/VIT/3/2010	VIT10-03	639	636	0	99.53	0.47	ME-SA	PanAsia
7	O/VIT/4/2010	VIT10-04	639	635	0	99.37	0.63	ME-SA	PanAsia
8	O/VIT/6/2010	VIT10-06	639	635	0	99.37	0.63	ME-SA	PanAsia
9	O/VIT/12/2010	VIT10-12	639	634	0	99.22	0.78	ME-SA	PanAsia
10	O/VIT/17/2005 (HQ116283)	VIT05-17	639	613	0	95.93	4.07	ME-SA	PanAsia
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	599	0	93.74	6.26	ME-SA	PanAsia
2	O/KUW/3/97 (DQ164904)	KUW97-03	639	587	0	91.86	8.14	ME-SA	Ind-2001a
3	O/IRN/31/2009	IRN09-31	639	584	0	91.39	8.61	ME-SA	PanAsia-2 ^{FAR-09}
4	O/IRN/8/2005	IRN05-08	639	584	0	91.39	8.61	ME-SA	PanAsia-2
5	O/IRN/18/2010	IRN10-18	639	583	0	91.24	8.76	ME-SA	PanAsia-2 ^{BAL-09}
6	O/OMN/7/2001 (DQ164941)	OMN01-07	639	581	0	90.92	9.08	ME-SA	Ind-2001b
7	O/BHU/3/2009	BHU09-03	639	579	0	90.61	9.39	ME-SA	Ind-2001d
8	O/UAE/4/2008	UAE08-04	636	575	0	90.41	9.59	ME-SA	Ind-2001c
9	O/IRN/88/2009	IRN09-88	639	577	0	90.30	9.70	ME-SA	PanAsia-2 ^{ANT-10}
10	O/PAK/16/2010	PAK10-16	639	577	0	90.30	9.70	ME-SA	PanAsia-2 ^{PUN-10}

nt, nucleotides

*, not a WRLFMD reference number

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Serotype: O	Report date: 17/11/2010
WRLFMD Ref No: VIT/10/2010	Reported by: N.J. Knowles
Batch No: WRLFMD/2010/00035	Checked by: D.P. King
Sender Ref: 10-7668 A	
Location: Tay Ninh, Vietnam	Topotype: ME-SA
Date collected: 15/10/2010	Genotype/strain: PanAsia
Date received by WRLFMD: 05/11/2010	Sequence filename: VIT10-10.SEQ
Date received for sequencing: 12/11/2010	Date sequence last updated: 17/11/2010
Species: Cattle	No. of Nt determined: 639
Material used: BHK BTy1	No. of ambiguities: 0
Region sequenced: VP1	Gene length: 639
RT-PCR primers: O-1C244F/EUR-2B52R	Total no. of comparisons: 2476
O-1C272F/EUR-2B52R	Min. no. of nt for comparison: 600
	Total turn-around time: 12 days
	Sequencing time: 5 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/VIT/11/2010	VIT10-11	639	639	0	100.00	0.00	ME-SA	PanAsia
2	O/VIT/7/2010	VIT10-07	639	638	0	99.84	0.16	ME-SA	PanAsia
3	O/VIT/8/2010	VIT10-08	639	638	0	99.84	0.16	ME-SA	PanAsia
4	O/VIT/13/2010	VIT10-13	639	637	0	99.69	0.31	ME-SA	PanAsia
5	O/VIT/3/2010	VIT10-03	639	637	0	99.69	0.31	ME-SA	PanAsia
6	O/VIT/4/2010	VIT10-04	639	636	0	99.53	0.47	ME-SA	PanAsia
7	O/VIT/6/2010	VIT10-06	639	636	0	99.53	0.47	ME-SA	PanAsia
8	O/VIT/9/2010	VIT10-09	639	636	0	99.53	0.47	ME-SA	PanAsia
9	O/VIT/12/2010	VIT10-12	639	635	0	99.37	0.63	ME-SA	PanAsia
10	O/VIT/17/2005 (HQ116283)	VIT05-17	639	614	0	96.09	3.91	ME-SA	PanAsia
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	600	0	93.90	6.10	ME-SA	PanAsia
2	O/KUW/3/97 (DQ164904)	KUW97-03	639	588	0	92.02	7.98	ME-SA	Ind-2001a
3	O/IRN/31/2009	IRN09-31	639	585	0	91.55	8.45	ME-SA	PanAsia-2 ^{FAR-09}
4	O/IRN/8/2005	IRN05-08	639	585	0	91.55	8.45	ME-SA	PanAsia-2
5	O/IRN/18/2010	IRN10-18	639	582	0	91.08	8.92	ME-SA	PanAsia-2 ^{BAL-09}
6	O/OMN/7/2001 (DQ164941)	OMN01-07	639	582	0	91.08	8.92	ME-SA	Ind-2001b
7	O/BHU/3/2009	BHU09-03	639	580	0	90.77	9.23	ME-SA	Ind-2001d
8	O/UAE/4/2008	UAE08-04	636	575	0	90.41	9.59	ME-SA	Ind-2001c
9	O/PAK/16/2010	PAK10-16	639	577	0	90.30	9.70	ME-SA	PanAsia-2 ^{PUN-10}
10	O/IRN/88/2009	IRN09-88	639	576	0	90.14	9.86	ME-SA	PanAsia-2 ^{ANT-10}

nt, nucleotides

*, not a WRLFMD reference number

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Serotype: O	Report date: 17/11/2010
WRLFMD Ref No: VIT/11/2010	Reported by: N.J. Knowles
Batch No: WRLFMD/2010/00035	Checked by: D.P. King
Sender Ref: 10-7668 B	
Location: Tay Ninh, Vietnam	Topotype: ME-SA
Date collected: 15/10/2010	Genotype/strain: PanAsia
Date received by WRLFMD: 05/11/2010	Sequence filename: VIT10-11.SEQ
Date received for sequencing: 12/11/2010	Date sequence last updated: 17/11/2010
Species: Cattle	No. of Nt determined: 639
Material used: BHK BTy1	No. of ambiguities: 0
Region sequenced: VP1	Gene length: 639
RT-PCR primers: O-1C244F/EUR-2B52R	Total no. of comparisons: 2476
O-1C272F/EUR-2B52R	Min. no. of nt for comparison: 600
	Total turn-around time: 12 days
	Sequencing time: 5 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/VIT/10/2010	VIT10-10	639	639	0	100.00	0.00	ME-SA	PanAsia
2	O/VIT/7/2010	VIT10-07	639	638	0	99.84	0.16	ME-SA	PanAsia
3	O/VIT/8/2010	VIT10-08	639	638	0	99.84	0.16	ME-SA	PanAsia
4	O/VIT/13/2010	VIT10-13	639	637	0	99.69	0.31	ME-SA	PanAsia
5	O/VIT/3/2010	VIT10-03	639	637	0	99.69	0.31	ME-SA	PanAsia
6	O/VIT/4/2010	VIT10-04	639	636	0	99.53	0.47	ME-SA	PanAsia
7	O/VIT/6/2010	VIT10-06	639	636	0	99.53	0.47	ME-SA	PanAsia
8	O/VIT/9/2010	VIT10-09	639	636	0	99.53	0.47	ME-SA	PanAsia
9	O/VIT/12/2010	VIT10-12	639	635	0	99.37	0.63	ME-SA	PanAsia
10	O/VIT/17/2005 (HQ116283)	VIT05-17	639	614	0	96.09	3.91	ME-SA	PanAsia
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	600	0	93.90	6.10	ME-SA	PanAsia
2	O/KUW/3/97 (DQ164904)	KUW97-03	639	588	0	92.02	7.98	ME-SA	Ind-2001a
3	O/IRN/31/2009	IRN09-31	639	585	0	91.55	8.45	ME-SA	PanAsia-2 ^{FAR-09}
4	O/IRN/8/2005	IRN05-08	639	585	0	91.55	8.45	ME-SA	PanAsia-2
5	O/IRN/18/2010	IRN10-18	639	582	0	91.08	8.92	ME-SA	PanAsia-2 ^{BAL-09}
6	O/OMN/7/2001 (DQ164941)	OMN01-07	639	582	0	91.08	8.92	ME-SA	Ind-2001b
7	O/BHU/3/2009	BHU09-03	639	580	0	90.77	9.23	ME-SA	Ind-2001d
8	O/UAE/4/2008	UAE08-04	636	575	0	90.41	9.59	ME-SA	Ind-2001c
9	O/PAK/16/2010	PAK10-16	639	577	0	90.30	9.70	ME-SA	PanAsia-2 ^{PUN-10}
10	O/IRN/88/2009	IRN09-88	639	576	0	90.14	9.86	ME-SA	PanAsia-2 ^{ANT-10}

nt, nucleotides

*, not a WRLFMD reference number

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Serotype: O	Report date: 17/11/2010
WRLFMD Ref No: VIT/12/2010	Reported by: N.J. Knowles
Batch No: WRLFMD/2010/00035	Checked by: D.P. King
Sender Ref: 10-7911 A	
Location: Ba Riqa-Vung Tau, Vietnam	Topotype: ME-SA
Date collected: 24/10/2010	Genotype/strain: PanAsia
Date received by WRLFMD: 05/11/2010	Sequence filename: VIT10-12.SEQ
Date received for sequencing: 12/11/2010	Date sequence last updated: 17/11/2010
Species: Cattle	No. of Nt determined: 639
Material used: BHK BTy1	No. of ambiguities: 0
Region sequenced: VP1	Gene length: 639
RT-PCR primers: O-1C244F/EUR-2B52R	Total no. of comparisons: 2476
O-1C272F/EUR-2B52R	Min. no. of nt for comparison: 600
	Total turn-around time: 12 days
	Sequencing time: 5 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/VIT/7/2010	VIT10-07	639	636	0	99.53	0.47	ME-SA	PanAsia
2	O/VIT/8/2010	VIT10-08	639	636	0	99.53	0.47	ME-SA	PanAsia
3	O/VIT/10/2010	VIT10-10	639	635	0	99.37	0.63	ME-SA	PanAsia
4	O/VIT/11/2010	VIT10-11	639	635	0	99.37	0.63	ME-SA	PanAsia
5	O/VIT/13/2010	VIT10-13	639	635	0	99.37	0.63	ME-SA	PanAsia
6	O/VIT/3/2010	VIT10-03	639	635	0	99.37	0.63	ME-SA	PanAsia
7	O/VIT/4/2010	VIT10-04	639	634	0	99.22	0.78	ME-SA	PanAsia
8	O/VIT/6/2010	VIT10-06	639	634	0	99.22	0.78	ME-SA	PanAsia
9	O/VIT/9/2010	VIT10-09	639	634	0	99.22	0.78	ME-SA	PanAsia
10	O/VIT/17/2005 (HQ116283)	VIT05-17	639	612	0	95.77	4.23	ME-SA	PanAsia
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	598	0	93.58	6.42	ME-SA	PanAsia
2	O/KUW/3/97 (DQ164904)	KUW97-03	639	584	0	91.39	8.61	ME-SA	Ind-2001a
3	O/IRN/31/2009	IRN09-31	639	583	0	91.24	8.76	ME-SA	PanAsia-2 ^{FAR-09}
4	O/IRN/8/2005	IRN05-08	639	583	0	91.24	8.76	ME-SA	PanAsia-2
5	O/IRN/18/2010	IRN10-18	639	580	0	90.77	9.23	ME-SA	PanAsia-2 ^{BAL-09}
6	O/OMN/7/2001 (DQ164941)	OMN01-07	639	578	0	90.45	9.55	ME-SA	Ind-2001b
7	O/BHU/3/2009	BHU09-03	639	577	0	90.30	9.70	ME-SA	Ind-2001d
8	O/UAE/4/2008	UAE08-04	636	572	0	89.94	10.06	ME-SA	Ind-2001c
9	O/IRN/88/2009	IRN09-88	639	574	0	89.83	10.17	ME-SA	PanAsia-2 ^{ANT-10}
10	O/PAK/16/2010	PAK10-16	639	574	0	89.83	10.17	ME-SA	PanAsia-2 ^{PUN-10}

nt, nucleotides

*, not a WRLFMD reference number

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Serotype: O	Report date: 17/11/2010
WRLFMD Ref No: VIT/13/2010	Reported by: N.J. Knowles
Batch No: WRLFMD/2010/00035	Checked by: D.P. King
Sender Ref: 10-7915 B	
Location: Ho Chi Minh City, Vietnam	Topotype: ME-SA
Date collected: 25/10/2010	Genotype/strain: PanAsia
Date received by WRLFMD: 05/11/2010	Sequence filename: VIT10-13.SEQ
Date received for sequencing: 12/11/2010	Date sequence last updated: 17/11/2010
Species: Pig	No. of Nt determined: 639
Material used: BHK RS1	No. of ambiguities: 0
Region sequenced: VP1	Gene length: 639
RT-PCR primers: O-1C244F/EUR-2B52R	Total no. of comparisons: 2476
O-1C272F/EUR-2B52R	Min. no. of nt for comparison: 600
	Total turn-around time: 12 days
	Sequencing time: 5 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/VIT/7/2010	VIT10-07	639	638	0	99.84	0.16	ME-SA	PanAsia
2	O/VIT/8/2010	VIT10-08	639	638	0	99.84	0.16	ME-SA	PanAsia
3	O/VIT/10/2010	VIT10-10	639	637	0	99.69	0.31	ME-SA	PanAsia
4	O/VIT/11/2010	VIT10-11	639	637	0	99.69	0.31	ME-SA	PanAsia
5	O/VIT/3/2010	VIT10-03	639	637	0	99.69	0.31	ME-SA	PanAsia
6	O/VIT/4/2010	VIT10-04	639	636	0	99.53	0.47	ME-SA	PanAsia
7	O/VIT/6/2010	VIT10-06	639	636	0	99.53	0.47	ME-SA	PanAsia
8	O/VIT/9/2010	VIT10-09	639	636	0	99.53	0.47	ME-SA	PanAsia
9	O/VIT/12/2010	VIT10-12	639	635	0	99.37	0.63	ME-SA	PanAsia
10	O/VIT/17/2005 (HQ116283)	VIT05-17	639	614	0	96.09	3.91	ME-SA	PanAsia
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	602	0	94.21	5.79	ME-SA	PanAsia
2	O/IRN/31/2009	IRN09-31	639	587	0	91.86	8.14	ME-SA	PanAsia-2 ^{FAR-09}
3	O/IRN/8/2005	IRN05-08	639	587	0	91.86	8.14	ME-SA	PanAsia-2
4	O/KUW/3/97 (DQ164904)	KUW97-03	639	586	0	91.71	8.29	ME-SA	Ind-2001a
5	O/IRN/18/2010	IRN10-18	639	584	0	91.39	8.61	ME-SA	PanAsia-2 ^{BAL-09}
6	O/OMN/7/2001 (DQ164941)	OMN01-07	639	580	0	90.77	9.23	ME-SA	Ind-2001b
7	O/BHU/3/2009	BHU09-03	639	578	0	90.45	9.55	ME-SA	Ind-2001d
8	O/IRN/88/2009	IRN09-88	639	578	0	90.45	9.55	ME-SA	PanAsia-2 ^{ANT-10}
9	O/TUR/257/2008* (FMDI)	TUR08-AD	639	578	0	90.45	9.55	ME-SA	PanAsia-2 ^{TER-08}
10	O/UAE/4/2008	UAE08-04	636	574	0	90.25	9.75	ME-SA	Ind-2001c

nt, nucleotides

*, not a WRLFMD reference number

Assembled with Report Generator v3.11

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Report on FMDV O in Vietnam in 2010

Batch: WRLFMD/2010/00035

Software: MEGA 4.0

No. of Taxa : 265

Data File : n:\levd\meg\db\fmvd\o\VIT2010a.meg

Data Title : O Vietnam 2010

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

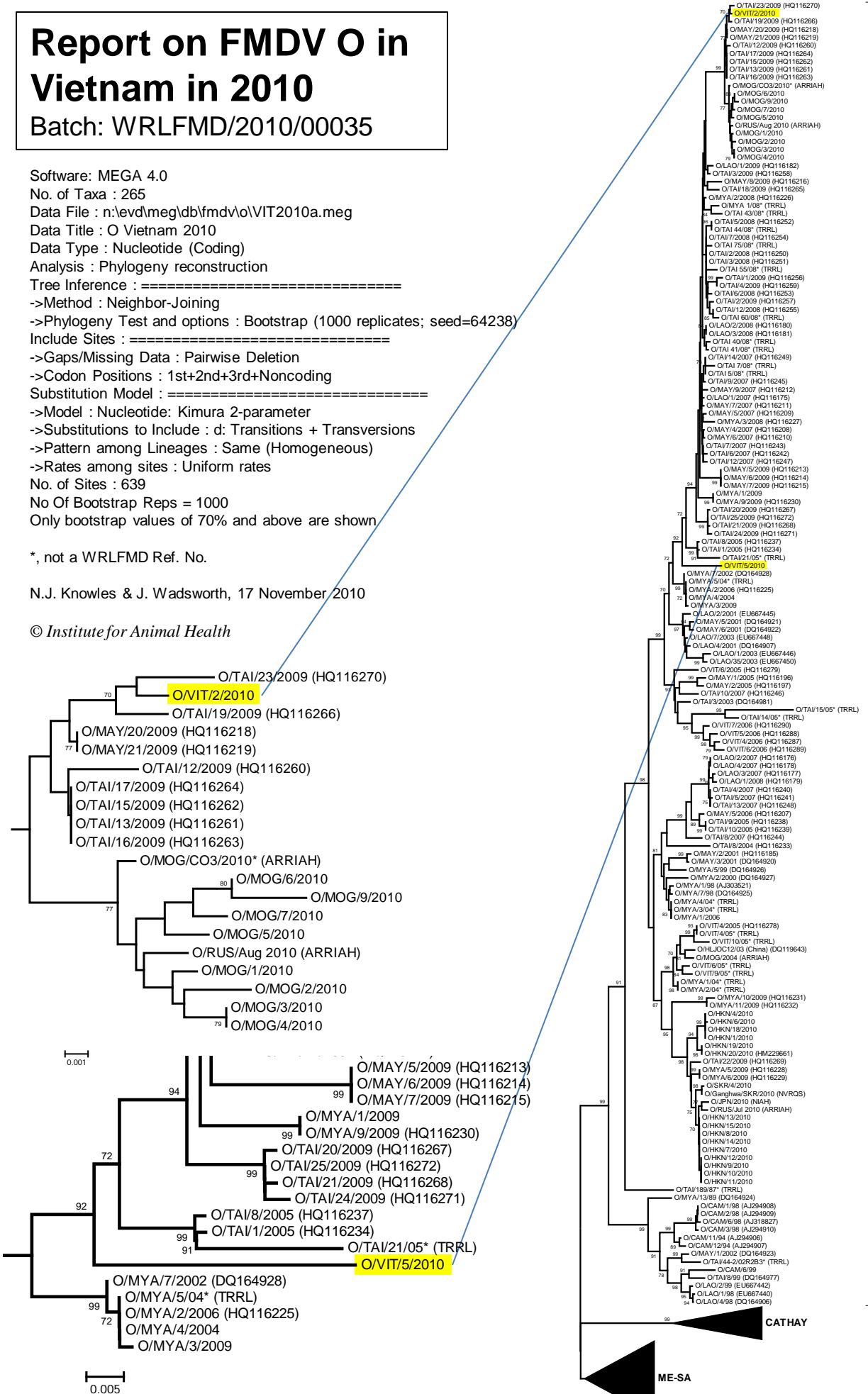
No Of Bootstrap Reps = 1000

Only bootstrap values of 70% and above are shown

*, not a WRLFMD Ref. No.

N.J. Knowles & J. Wadsworth, 17 November 2010

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SEA

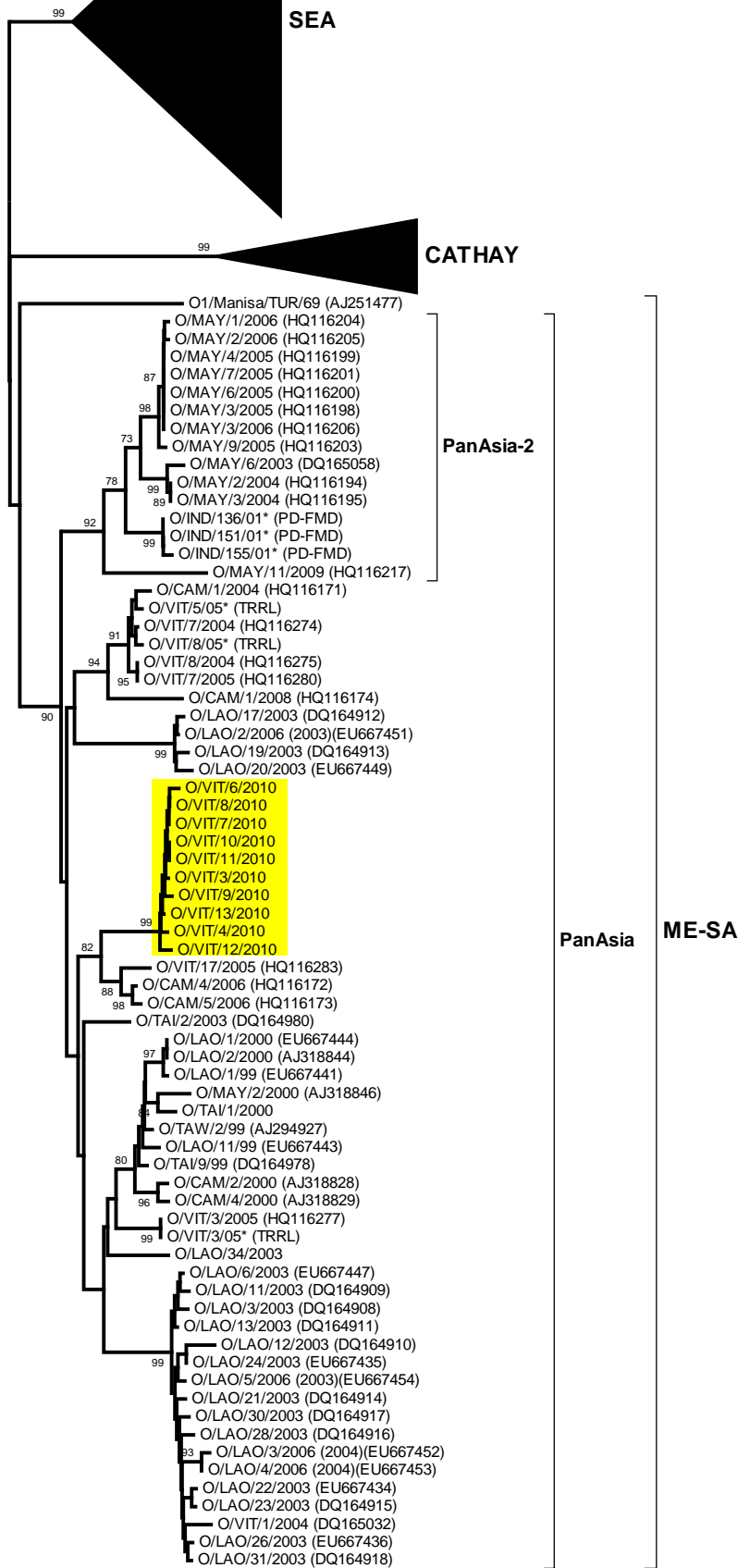
CATHAY

ME-SA

0.02

Report on FMDV O in Vietnam in 2010

Batch: WRLFMD/2010/00035



0.02