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FMD Sequencing Report

Lab Reference WRL Batch Number: WRLFMD/2009/00029
Sender Details: [REDACTED]
Date Received: 2nd June 2009
Country of Origin: Israel
Date Reported: 15th September 2009

Dear [REDACTED]

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:

15/9/09

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.byrom@bbsrc.ac.uk)

Molecular Epidemiology Report Form

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Serotype: O WRL Ref No: ISR/11/2007 Sender Ref: 540377 Date collected: 25/01/2007 Date received by WRLFMD: 02/06/2009 Date received for sequencing: 12/06/2009 Species: CATTLE Material used: BTy1 Region sequenced: VP1 RT-PCR primers: O-1C244F/EUR-2B52R; O-1C272F/EUR-2B52R No. of Nt determined: 639 No. of ambiguities: 0 Gene length: 639	Report date: 07/09/2009 Reported by: N.J. Knowles Checked by: D.P. King Topotype: ME-SA Genotype/strain: PanAsia-2 Sequence filename: ISR07-11.SEQ Date sequence last updated: 10/08/2009 Total no. of comparisons: 2096 Min. no. of nt for comparison: 300 Total turn-around time: 97 days Sequencing time: 87 days																																																																																								
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Serotype: O WRL Ref No: ISR/13/2007 Sender Ref: 540430 Date collected: 27/01/2007 Date received by WRLFMD: 02/06/2009 Date received for sequencing: 12/06/2009 Species: CATTLE Material used: BTy1 Region sequenced: VP1 RT-PCR primers: O-1C244F/EUR-2B52R; O-1C272F/EUR-2B52R No. of Nt determined: 639 No. of ambiguities: 0 Gene length: 639	Report date: 07/09/2009 Reported by: N.J. Knowles Checked by: D.P. King Topotype: ME-SA Genotype/strain: PanAsia-2 Sequence filename: ISR07-13.SEQ Date sequence last updated: 10/08/2009 Total no. of comparisons: 2096 Min. no. of nt for comparison: 300 Total turn-around time: 97 days Sequencing time: 87 days																																																																																								
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Serotype: O WRL Ref No: ISR/14/2007 Sender Ref: 540421 Date collected: 28/01/2007 Date received by WRLFMD: 02/06/2009 Date received for sequencing: 12/06/2009 Species: CATTLE Material used: BTy1 Region sequenced: VP1 RT-PCR primers: O-1C244F/EUR-2B52R; O-1C272F/EUR-2B52R No. of Nt determined: 639 No. of ambiguities: 0 Gene length: 639	Report date: 07/09/2009 Reported by: N.J. Knowles Checked by: D.P. King Topotype: ME-SA Genotype/strain: PanAsia-2 Sequence filename: ISR07-14.SEQ Date sequence last updated: 10/08/2009 Total no. of comparisons: 2096 Min. no. of nt for comparison: 300 Total turn-around time: 97 days Sequencing time: 87 days																																																																																								
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4	O/ISR/7/2007 (FJ561315)	ISR07-07	639	639	0	100	0																																																																																		
5	O/ISR/9/2007 (FJ561316)	ISR07-09	639	639	0	100	0																																																																																		
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Molecular Epidemiology Report Form

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Serotype: O WRL Ref No: ISR/15/2007 Sender Ref: 540975 Date collected: 31/01/2007 Date received by WRLFMD: 02/06/2009 Date received for sequencing: 12/06/2009 Species: CATTLE Material used: BTy1 Region sequenced: VP1 RT-PCR primers: O-1C244F/EUR-2B52R; O-1C272F/EUR-2B52R No. of Nt determined: 639 No. of ambiguities: 0 Gene length: 639	Report date: 07/09/2009 Reported by: N.J. Knowles Checked by: D.P. King Topotype: ME-SA Genotype/strain: PanAsia-2 Sequence filename: ISR07-15.SEQ Date sequence last updated: 10/08/2009 Total no. of comparisons: 2096 Min. no. of nt for comparison: 300 Total turn-around time: 97 days Sequencing time: 87 days																																																																																								
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2	O/ISR/42/2007	ISR07-42	639	639	0	100	0																																																																																		
3	O/PAT/11/2007	PAT07-11	639	639	0	100	0																																																																																		
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6	O/ISR/2/88 (DQ164899)	ISR88-02	639	549	0	85.92	14.08																																																																																		
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Serotype: O WRL Ref No: ISR/17/2007 Sender Ref: 541840 Date collected: 08/02/2007 Date received by WRLFMD: 02/06/2009 Date received for sequencing: 12/06/2009 Species: CATTLE Material used: BTy1 Region sequenced: VP1 RT-PCR primers: O-1C244F/EUR-2B52R; O-1C272F/EUR-2B52R No. of Nt determined: 639 No. of ambiguities: 0 Gene length: 639	Report date: 07/09/2009 Reported by: N.J. Knowles Checked by: D.P. King Topotype: ME-SA Genotype/strain: PanAsia-2 Sequence filename: ISR07-17.SEQ Date sequence last updated: 10/08/2009 Total no. of comparisons: 2096 Min. no. of nt for comparison: 300 Total turn-around time: 97 days Sequencing time: 87 days																																																																																								
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Serotype: O WRL Ref No: ISR/19/2007 Sender Ref: 542757 Date collected: 17/02/2007 Date received by WRLFMD: 02/06/2009 Date received for sequencing: 25/06/2009 Species: CATTLE Material used: BTy1 Region sequenced: VP1 RT-PCR primers: O-1C244F/EUR-2B52R; O-1C272F/EUR-2B52R No. of Nt determined: 639 No. of ambiguities: 0 Gene length: 639	Report date: 07/09/2009 Reported by: N.J. Knowles Checked by: D.P. King Topotype: ME-SA Genotype/strain: PanAsia-2 Sequence filename: ISR07-19.SEQ Date sequence last updated: 10/08/2009 Total no. of comparisons: 2096 Min. no. of nt for comparison: 300 Total turn-around time: 97 days Sequencing time: 74 days																																																																																								
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1	O/TAW/2/99 (AJ294927)	TAW99-02	639	602	0	94.21	5.79																																																																																		
2	O/IND/53/79 [AF292107]	IND79A53	639	567	0	88.73	11.27																																																																																		
3	O/IND/R2/75* (AF204276)	IND75--A	639	565	0	88.42	11.58																																																																																		
4	O1/Manisa/TUR/69 (AJ251477)	TUR69--E	639	565	0	88.42	11.58																																																																																		
5	O/TAI/189/87* [TRRL]	TAI87-AC	639	556	0	87.01	12.99																																																																																		
6	O/ISR/2/88 (DQ164899)	ISR88-02	639	554	0	86.7	13.3																																																																																		
7	O/MOR/1/91	MOR91-01	639	550	0	86.07	13.93																																																																																		
8	O/PHI/5/95 (DQ164946)	PHI95-05	639	517	0	80.91	19.09																																																																																		
9	O/HKN/6/83 (AJ294919)	HKN83-06	637	509	2	79.91	20.09																																																																																		
10	O1/BFS 1860/UK/67 (J02185)	UKG67--A	639	506	0	79.19	20.81																																																																																		
nt, nucleotides *, not a WRLFMD reference number																																																																																									

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Serotype: O WRL Ref No: ISR/20/2007 Sender Ref: 543181 Date collected: 19/02/2007 Date received by WRLFMD: 02/06/2009 Date received for sequencing: 25/06/2009 Species: CATTLE Material used: BTy1 Region sequenced: VP1 RT-PCR primers: O-1C244F/EUR-2B52R; O-1C272F/EUR-2B52R No. of Nt determined: 639 No. of ambiguities: 0 Gene length: 639	Report date: 07/09/2009 Reported by: N.J. Knowles Checked by: D.P. King Topotype: ME-SA Genotype/strain: PanAsia-2 Sequence filename: ISR07-20.SEQ Date sequence last updated: 10/08/2009 Total no. of comparisons: 2096 Min. no. of nt for comparison: 300 Total turn-around time: 97 days Sequencing time: 74 days																																																																																								
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Pos.	Virus name	Filename	No. nt compared	No. nt matched	No. of ambiguities	% Identity	% Difference																																																																																		
1	O/ISR/13/2007	ISR07-13	639	639	0	100	0																																																																																		
2	O/ISR/14/2007	ISR07-14	639	639	0	100	0																																																																																		
3	O/ISR/29/2007	ISR07-29	639	639	0	100	0																																																																																		
4	O/ISR/7/2007 (FJ561315)	ISR07-07	639	639	0	100	0																																																																																		
5	O/ISR/9/2007 (FJ561316)	ISR07-09	639	639	0	100	0																																																																																		
6	O/ISR/5/2007 (FJ561314)	ISR07-05	639	638	0	99.84	0.16																																																																																		
7	O/ISR/17/2007	ISR07-17	639	637	0	99.69	0.31																																																																																		
8	O/JOR/6/2006 (FJ561317)	JOR06-06	639	635	0	99.37	0.63																																																																																		
9	O/TUR/4/2007	TUR07-04	639	635	0	99.37	0.63																																																																																		
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Serotype: O WRL Ref No: ISR/21/2007 Sender Ref: 543311 Date collected: 21/02/2007 Date received by WRLFMD: 02/06/2009 Date received for sequencing: 25/06/2009 Species: CATTLE Material used: BTy1 Region sequenced: VP1 RT-PCR primers: O-1C244F/EUR-2B52R; O-1C272F/EUR-2B52R No. of Nt determined: 639 No. of ambiguities: 0 Gene length: 639	Report date: 07/09/2009 Reported by: N.J. Knowles Checked by: D.P. King Topotype: ME-SA Genotype/strain: PanAsia-2 Sequence filename: ISR07-21.SEQ Date sequence last updated: 10/08/2009 Total no. of comparisons: 2096 Min. no. of nt for comparison: 300 Total turn-around time: 97 days Sequencing time: 74 days																																																																																								
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1	O/ISR/24/2007	ISR07-24	639	639	0	100	0																																																																																		
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Serotype: O WRL Ref No: ISR/24/2007 Sender Ref: 544011 Date collected: 26/02/2007 Date received by WRLFMD: 02/06/2009 Date received for sequencing: 25/06/2009 Species: CATTLE Material used: BTy1 Region sequenced: VP1 RT-PCR primers: O-1C244F/EUR-2B52R; O-1C272F/EUR-2B52R No. of Nt determined: 639 No. of ambiguities: 0 Gene length: 639	Report date: 07/09/2009 Reported by: N.J. Knowles Checked by: D.P. King Topotype: ME-SA Genotype/strain: PanAsia-2 Sequence filename: ISR07-24.SEQ Date sequence last updated: 10/08/2009 Total no. of comparisons: 2096 Min. no. of nt for comparison: 300 Total turn-around time: 97 days Sequencing time: 74 days																																																																																								
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Serotype: O WRL Ref No: ISR/25/2007 Sender Ref: 545072 Date collected: 10/03/2007 Date received by WRLFMD: 02/06/2009 Date received for sequencing: 25/06/2009 Species: CATTLE Material used: BTy1 Region sequenced: VP1 RT-PCR primers: O-1C244F/EUR-2B52R; O-1C272F/EUR-2B52R No. of Nt determined: 639 No. of ambiguities: 0 Gene length: 639	Report date: 07/09/2009 Reported by: N.J. Knowles Checked by: D.P. King Topotype: ME-SA Genotype/strain: PanAsia-2 Sequence filename: ISR07-25.SEQ Date sequence last updated: 10/08/2009 Total no. of comparisons: 2096 Min. no. of nt for comparison: 300 Total turn-around time: 97 days Sequencing time: 74 days																																																																																								
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nt, nucleotides *, not a WRLFMD reference number																																																																																									

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Serotype: O WRL Ref No: ISR/29/2007 Sender Ref: 546825 Date collected: 22/03/2007 Date received by WRLFMD: 02/06/2009 Date received for sequencing: 25/06/2009 Species: GAZELLE Material used: RS1 Region sequenced: VP1 RT-PCR primers: O-1C244F/EUR-2B52R; O-1C272F/EUR-2B52R No. of Nt determined: 639 No. of ambiguities: 0 Gene length: 639	Report date: 07/09/2009 Reported by: N.J. Knowles Checked by: D.P. King Topotype: ME-SA Genotype/strain: PanAsia-2 Sequence filename: ISR07-29.SEQ Date sequence last updated: 10/08/2009 Total no. of comparisons: 2096 Min. no. of nt for comparison: 300 Total turn-around time: 97 days Sequencing time: 74 days																																																																																								
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Serotype: O WRL Ref No: ISR/30/2007 Sender Ref: 547412 Date collected: 25/03/2007 Date received by WRLFMD: 02/06/2009 Date received for sequencing: 25/06/2009 Species: CATTLE Material used: BTy1 Region sequenced: VP1 RT-PCR primers: O-1C244F/EUR-2B52R; O-1C272F/EUR-2B52R No. of Nt determined: 639 No. of ambiguities: 0 Gene length: 639	Report date: 07/09/2009 Reported by: N.J. Knowles Checked by: D.P. King Topotype: ME-SA Genotype/strain: PanAsia-2 Sequence filename: ISR07-30.SEQ Date sequence last updated: 10/08/2009 Total no. of comparisons: 2096 Min. no. of nt for comparison: 300 Total turn-around time: 97 days Sequencing time: 74 days																																																																																								
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Serotype: O WRL Ref No: ISR/31/2007 Sender Ref: 547681 Date collected: 30/03/2007 Date received by WRLFMD: 02/06/2009 Date received for sequencing: 25/06/2009 Species: GOAT Material used: BTy1 Region sequenced: VP1 RT-PCR primers: O-1C244F/EUR-2B52R; O-1C272F/EUR-2B52R No. of Nt determined: 639 No. of ambiguities: 0 Gene length: 639	Report date: 07/09/2009 Reported by: N.J. Knowles Checked by: D.P. King Topotype: ME-SA Genotype/strain: PanAsia-2 Sequence filename: ISR07-31.SEQ Date sequence last updated: 10/08/2009 Total no. of comparisons: 2096 Min. no. of nt for comparison: 300 Total turn-around time: 97 days Sequencing time: 74 days																																																																																								
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Serotype: O WRL Ref No: ISR/32/2007 Sender Ref: 547793 Date collected: 31/03/2007 Date received by WRLFMD: 02/06/2009 Date received for sequencing: 25/06/2009 Species: CATTLE Material used: BTy1 Region sequenced: VP1 RT-PCR primers: O-1C244F/EUR-2B52R; O-1C272F/EUR-2B52R No. of Nt determined: 639 No. of ambiguities: 0 Gene length: 639	Report date: 07/09/2009 Reported by: N.J. Knowles Checked by: D.P. King Topotype: ME-SA Genotype/strain: PanAsia-2 Sequence filename: ISR07-32.SEQ Date sequence last updated: 10/08/2009 Total no. of comparisons: 2096 Min. no. of nt for comparison: 300 Total turn-around time: 97 days Sequencing time: 74 days																																																																																								
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Serotype: O WRL Ref No: ISR/34/2007 Sender Ref: 547801 Date collected: 01/04/2007 Date received by WRLFMD: 02/06/2009 Date received for sequencing: 25/06/2009 Species: SHEEP Material used: BTy1 Region sequenced: VP1 RT-PCR primers: O-1C244F/EUR-2B52R; O-1C272F/EUR-2B52R No. of Nt determined: 639 No. of ambiguities: 0 Gene length: 639	Report date: 07/09/2009 Reported by: N.J. Knowles Checked by: D.P. King Topotype: ME-SA Genotype/strain: PanAsia-2 Sequence filename: ISR07-34.SEQ Date sequence last updated: 10/08/2009 Total no. of comparisons: 2096 Min. no. of nt for comparison: 300 Total turn-around time: 97 days Sequencing time: 74 days																																																																																								
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Serotype: O WRL Ref No: ISR/36/2007 Sender Ref: 548360 Date collected: 07/04/2007 Date received by WRLFMD: 02/06/2009 Date received for sequencing: 25/06/2009 Species: CATTLE Material used: BTy1 Region sequenced: VP1 RT-PCR primers: O-1C244F/EUR-2B52R; O-1C272F/EUR-2B52R No. of Nt determined: 639 No. of ambiguities: 0 Gene length: 639	Report date: 07/09/2009 Reported by: N.J. Knowles Checked by: D.P. King Topotype: ME-SA Genotype/strain: PanAsia-2 Sequence filename: ISR07-36.SEQ Date sequence last updated: 10/08/2009 Total no. of comparisons: 2096 Min. no. of nt for comparison: 300 Total turn-around time: 97 days Sequencing time: 74 days																																																																																								
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Serotype: O WRL Ref No: ISR/37/2007 Sender Ref: 548593 Date collected: 12/04/2007 Date received by WRLFMD: 02/06/2009 Date received for sequencing: 25/06/2009 Species: CATTLE Material used: BTy1 Region sequenced: VP1 RT-PCR primers: O-1C244F/EUR-2B52R; O-1C272F/EUR-2B52R No. of Nt determined: 639 No. of ambiguities: 0 Gene length: 639	Report date: 07/09/2009 Reported by: N.J. Knowles Checked by: D.P. King Topotype: ME-SA Genotype/strain: PanAsia-2 Sequence filename: ISR07-37.SEQ Date sequence last updated: 10/08/2009 Total no. of comparisons: 2096 Min. no. of nt for comparison: 300 Total turn-around time: 97 days Sequencing time: 74 days																																																																																								
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Serotype: O WRL Ref No: ISR/38/2007 Sender Ref: 548856 Date collected: 12/04/2007 Date received by WRLFMD: 02/06/2009 Date received for sequencing: 25/06/2009 Species: CATTLE Material used: BTy1 Region sequenced: VP1 RT-PCR primers: O-1C244F/EUR-2B52R; O-1C272F/EUR-2B52R No. of Nt determined: 639 No. of ambiguities: 0 Gene length: 639	Report date: 07/09/2009 Reported by: N.J. Knowles Checked by: D.P. King Topotype: ME-SA Genotype/strain: PanAsia-2 Sequence filename: ISR07-38.SEQ Date sequence last updated: 10/08/2009 Total no. of comparisons: 2096 Min. no. of nt for comparison: 300 Total turn-around time: 97 days Sequencing time: 74 days																																																																																								
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Molecular Epidemiology Report Form

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Serotype: O WRL Ref No: ISR/39/2007 Sender Ref: 549767 Date collected: 22/04/2007 Date received by WRLFMD: 02/06/2009 Date received for sequencing: 25/06/2009 Species: CATTLE Material used: BTy1 Region sequenced: VP1 RT-PCR primers: O-1C244F/EUR-2B52R; O-1C272F/EUR-2B52R No. of Nt determined: 639 No. of ambiguities: 0 Gene length: 639	Report date: 07/09/2009 Reported by: N.J. Knowles Checked by: D.P. King Topotype: ME-SA Genotype/strain: PanAsia-2 Sequence filename: ISR07-39.SEQ Date sequence last updated: 10/08/2009 Total no. of comparisons: 2096 Min. no. of nt for comparison: 300 Total turn-around time: 97 days Sequencing time: 74 days																																																																																								
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Serotype: O WRL Ref No: ISR/40/2007 Sender Ref: 550119 Date collected: 26/03/2007 Date received by WRLFMD: 02/06/2009 Date received for sequencing: 25/06/2009 Species: GAZELLE Material used: BTy1 Region sequenced: VP1 RT-PCR primers: O-1C244F/EUR-2B52R; O-1C272F/EUR-2B52R No. of Nt determined: 639 No. of ambiguities: 0 Gene length: 639	Report date: 07/09/2009 Reported by: N.J. Knowles Checked by: D.P. King Topotype: ME-SA Genotype/strain: PanAsia-2 Sequence filename: ISR07-40.SEQ Date sequence last updated: 10/08/2009 Total no. of comparisons: 2096 Min. no. of nt for comparison: 300 Total turn-around time: 97 days Sequencing time: 74 days																																																																																								
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Serotype: O WRL Ref No: ISR/42/2007 Sender Ref: 550746 Date collected: 01/05/2007 Date received by WRLFMD: 02/06/2009 Date received for sequencing: 25/06/2009 Species: CATTLE Material used: BTy1 Region sequenced: VP1 RT-PCR primers: O-1C244F/EUR-2B52R; O-1C272F/EUR-2B52R No. of Nt determined: 639 No. of ambiguities: 0 Gene length: 639	Report date: 07/09/2009 Reported by: N.J. Knowles Checked by: D.P. King Topotype: ME-SA Genotype/strain: PanAsia-2 Sequence filename: ISR07-42.SEQ Date sequence last updated: 10/08/2009 Total no. of comparisons: 2096 Min. no. of nt for comparison: 300 Total turn-around time: 97 days Sequencing time: 74 days																																																																																								
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Serotype: O WRL Ref No: ISR/43/2007 Sender Ref: 550962 Date collected: 03/05/2007 Date received by WRLFMD: 02/06/2009 Date received for sequencing: 25/06/2009 Species: CATTLE Material used: BTy1 Region sequenced: VP1 RT-PCR primers: O-1C244F/EUR-2B52R; O-1C272F/EUR-2B52R No. of Nt determined: 639 No. of ambiguities: 0 Gene length: 639	Report date: 07/09/2009 Reported by: N.J. Knowles Checked by: D.P. King Topotype: ME-SA Genotype/strain: PanAsia-2 Sequence filename: ISR07-43.SEQ Date sequence last updated: 10/08/2009 Total no. of comparisons: 2096 Min. no. of nt for comparison: 300 Total turn-around time: 97 days Sequencing time: 74 days																																																																																								
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Serotype: O WRL Ref No: ISR/44/2007 Sender Ref: 551141 Date collected: 03/05/2007 Date received by WRLFMD: 02/06/2009 Date received for sequencing: 25/06/2009 Species: SHEEP Material used: BTy1 Region sequenced: VP1 RT-PCR primers: O-1C244F/EUR-2B52R; O-1C272F/EUR-2B52R No. of Nt determined: 639 No. of ambiguities: 0 Gene length: 639	Report date: 07/09/2009 Reported by: N.J. Knowles Checked by: D.P. King Topotype: ME-SA Genotype/strain: PanAsia-2 Sequence filename: ISR07-44.SEQ Date sequence last updated: 10/08/2009 Total no. of comparisons: 2096 Min. no. of nt for comparison: 300 Total turn-around time: 97 days Sequencing time: 74 days																																																																																								
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Serotype: O WRL Ref No: ISR/46/2007 Sender Ref: 554899 Date collected: 04/06/2007 Date received by WRLFMD: 02/06/2009 Date received for sequencing: 25/06/2009 Species: CATTLE Material used: BTy1 Region sequenced: VP1 RT-PCR primers: O-1C244F/EUR-2B52R; O-1C272F/EUR-2B52R No. of Nt determined: 639 No. of ambiguities: 0 Gene length: 639	Report date: 07/09/2009 Reported by: N.J. Knowles Checked by: D.P. King Topotype: ME-SA Genotype/strain: PanAsia-2 Sequence filename: ISR07-46.SEQ Date sequence last updated: 10/08/2009 Total no. of comparisons: 2096 Min. no. of nt for comparison: 300 Total turn-around time: 97 days Sequencing time: 74 days																																																																																								
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Report on FMDV O in Israel in 2007-2008

Batch: WRLFMD/2009/00029

Software: MEGA 4.0

No. of Taxa : 176

Data File : n:\levd\meg\db\fmdv\o\PAT2007a.meg

Data Title : PAT 2007 & ISR 2007-08

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

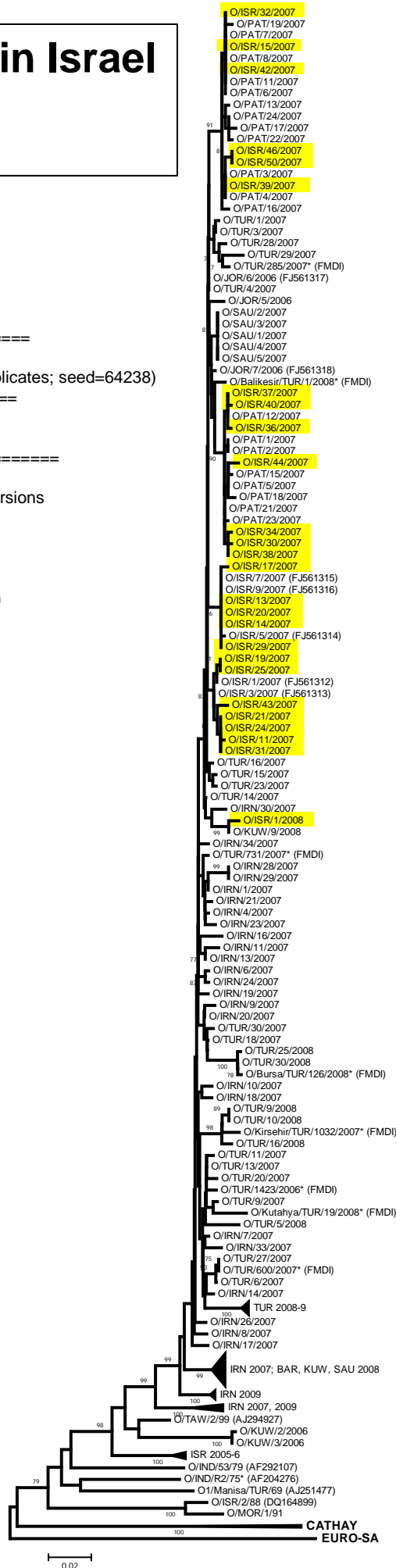
No. of Sites : 639

No Of Bootstrap Reps = 1000

Only bootstrap values of 70% and above are shown

*, not a WRLFMD Ref. No.

N.J. Knowles & J. Wadsworth, 7 September 2009



PanAsia-2

PanAsia

ME-SA

CATHAY
EURO-SA

0.02