

**Report from the Molecular Epidemiology Section of the Dept. of Exotic Disease Control to
the Head of the World Reference Laboratory for FMD (Non-QAU Form)**

Serotype: O	Report date: 12/05/2004						
WRL Ref No: BHU/30/2004	Reported by: N.J. Knowles						
Date collected: 16/02/2004	Checked by: J.-F. Valarcher						
Date received: 27/04/2004							
Species: Bovine	Topotype: ME-SA						
Material used: BTy1	Genotype/strain: PanAsia						
Region sequenced: VP1	Sequence filename: BHU04-30.SEQ						
RT-PCR primers: O-1C272F/NK61	Date sequence last updated: 11/05/2004						
No. of Nt determined: 639	Total no. of comparisons: 1400						
No. of ambiguities: 0							
Gene length: 639							
Comments:							
Ten Most Closely Related Viruses							
Pos.	Virus name	Filename	No. nt compared	No. nt matched	No. of ambiguities	% Identity	% Difference
1	O/BHU/31/2004	BHU04-31	639	639	0	100.00	0.00
2	O/BHU/26/2004	BHU04-26	639	638	0	99.84	0.16
3	O/BHU/27/2004	BHU04-27	638	637	1	99.84	0.16
4	O/BHU/39/2004	BHU04-39	639	635	0	99.37	0.63
5	O/BHU/40/2004	BHU04-40	639	635	0	99.37	0.63
6	O/BHU/28/2004	BHU04-28	638	633	1	99.22	0.78
7	O/NEP/2/2003	NEP03-02	638	633	1	99.22	0.78
8	O/NEP/6/2003	NEP03-06	639	632	0	98.90	1.10
9	O/BHU/49/2003	BHU03-49	639	631	0	98.75	1.25
10	O/BHU/14/2003	BHU03-14	623	615	0	98.72	1.28
Relationships to Reference Virus Strains							
Pos.	Virus name	Filename	No. nt compared	No. nt matched	No. of ambiguities	% Identity	% Difference
1	O/TAW/2/99	TAW99-02	639	608	0	95.15	4.85
2	O/IND/53/79	IND79A53	639	571	0	89.36	10.64
3	O/IND/R2/75*	IND75--A	639	569	0	89.05	10.95
4	O1/Manisa/TUR/69	TUR69--E	639	563	0	88.11	11.89
5	O/TAI/189/87*	TAI87-AC	639	555	0	86.85	13.15
6	O/ISR/1/88	ISR88-01	193	166	5	86.01	13.99
7	O/MOR/1/91	MOR91-01	207	177	3	85.51	14.49
8	O/HKN/6/83	HKN83-06	637	510	2	80.06	19.94
9	O/PHI/5/95	PHI95-05	516	413	6	80.04	19.96
10	O1/BFS 1860/UK/67	UKG67--A	639	506	0	79.19	20.81
nt, nucleotides							
*, not a WRLFMD reference number							

**Report from the Molecular Epidemiology Section of the Dept. of Exotic Disease Control to
the Head of the World Reference Laboratory for FMD (Non-QAU Form)**

Serotype: O	Report date: 12/05/2004
WRL Ref No: BHU/31/2004	Reported by: N.J. Knowles
Date collected: 16/02/2004	Checked by: J.-F. Valarcher
Date received: 27/04/2004	
Species: Bovine	Topotype: ME-SA
Material used: BTy1	Genotype/strain: PanAsia
Region sequenced: VP1	Sequence filename: BHU04-31.SEQ
RT-PCR primers: O-1C272F/NK61	Date sequence last updated: 11/05/2004
No. of Nt determined: 639	Total no. of comparisons: 1400
No. of ambiguities: 0	
Gene length: 639	

Comments:

Ten Most Closely Related Viruses

Pos.	Virus name	Filename	No. nt compared	No. nt matched	No. of ambiguities	% Identity	% Difference
1	O/BHU/30/2004	BHU04-30	639	639	0	100.00	0.00
2	O/BHU/26/2004	BHU04-26	639	638	0	99.84	0.16
3	O/BHU/27/2004	BHU04-27	638	637	1	99.84	0.16
4	O/BHU/39/2004	BHU04-39	639	635	0	99.37	0.63
5	O/BHU/40/2004	BHU04-40	639	635	0	99.37	0.63
6	O/BHU/28/2004	BHU04-28	638	633	1	99.22	0.78
7	O/NEP/2/2003	NEP03-02	638	633	1	99.22	0.78
8	O/NEP/6/2003	NEP03-06	639	632	0	98.90	1.10
9	O/BHU/49/2003	BHU03-49	639	631	0	98.75	1.25
10	O/BHU/14/2003	BHU03-14	623	615	0	98.72	1.28

Relationships to Reference Virus Strains

Pos.	Virus name	Filename	No. nt compared	No. nt matched	No. of ambiguities	% Identity	% Difference
1	O/TAW/2/99	TAW99-02	639	608	0	95.15	4.85
2	O/IND/53/79	IND79A53	639	571	0	89.36	10.64
3	O/IND/R2/75*	IND75--A	639	569	0	89.05	10.95
4	O1/Manisa/TUR/69	TUR69--E	639	563	0	88.11	11.89
5	O/TAI/189/87*	TAI87-AC	639	555	0	86.85	13.15
6	O/ISR/1/88	ISR88-01	193	166	5	86.01	13.99
7	O/MOR/1/91	MOR91-01	207	177	3	85.51	14.49
8	O/HKN/6/83	HKN83-06	637	510	2	80.06	19.94
9	O/PHI/5/95	PHI95-05	516	413	6	80.04	19.96
10	O1/BFS 1860/UK/67	UKG67--A	639	506	0	79.19	20.81

nt, nucleotides

*, not a WRLFMD reference number

**Report from the Molecular Epidemiology Section of the Dept. of Exotic Disease Control to
the Head of the World Reference Laboratory for FMD (Non-QAU Form)**

Serotype: O	Report date: 12/05/2004						
WRL Ref No: BHU/33/2004	Reported by: N.J. Knowles						
Date collected: 27/02/2004	Checked by: J.-F. Valarcher						
Date received: 27/04/2004							
Species: Bovine	Topotype: ME-SA						
Material used: BTy1	Genotype/strain: PanAsia						
Region sequenced: VP1	Sequence filename: BHU04-33.SEQ						
RT-PCR primers: O-1C272F/NK61	Date sequence last updated: 11/05/2004						
No. of Nt determined: 639	Total no. of comparisons: 1400						
No. of ambiguities: 0							
Gene length: 639							
Comments:							
Ten Most Closely Related Viruses							
Pos.	Virus name	Filename	No. nt compared	No. nt matched	No. of ambiguities	% Identity	% Difference
1	O/NEP/2/2003	NEP03-02	638	630	1	98.75	1.25
2	O/BHU/49/2003	BHU03-49	639	630	0	98.59	1.41
3	O/NEP/6/2003	NEP03-06	639	629	0	98.44	1.56
4	O/BHU/48/2003	BHU03-48	638	628	1	98.43	1.57
5	O/BHU/31/2004	BHU04-31	639	628	0	98.28	1.72
6	O/BHU/30/2004	BHU04-30	639	628	0	98.28	1.72
7	O/BHU/47/2003	BHU03-47	637	626	2	98.27	1.73
8	O/BHU/14/2003	BHU03-14	623	612	0	98.23	1.77
9	O/BHU/26/2004	BHU04-26	639	627	0	98.12	1.88
10	O/BHU/15/2003	BHU03-15	638	626	1	98.12	1.88
Relationships to Reference Virus Strains							
Pos.	Virus name	Filename	No. nt compared	No. nt matched	No. of ambiguities	% Identity	% Difference
1	O/TAW/2/99	TAW99-02	639	606	0	94.84	5.16
2	O/IND/53/79	IND79A53	639	572	0	89.51	10.49
3	O/IND/R2/75*	IND75--A	639	567	0	88.73	11.27
4	O1/Manisa/TUR/69	TUR69--E	639	565	0	88.42	11.58
5	O/ISR/1/88	ISR88-01	193	168	5	87.05	12.95
6	O/TAI/189/87*	TAI87-AC	639	553	0	86.54	13.46
7	O/MOR/1/91	MOR91-01	207	179	3	86.47	13.53
8	O/PHI/5/95	PHI95-05	516	415	6	80.43	19.57
9	O/HKN/6/83	HKN83-06	637	509	2	79.91	20.09
10	O1/BFS 1860/UK/67	UKG67--A	639	505	0	79.03	20.97
nt, nucleotides							
*, not a WRLFMD reference number							

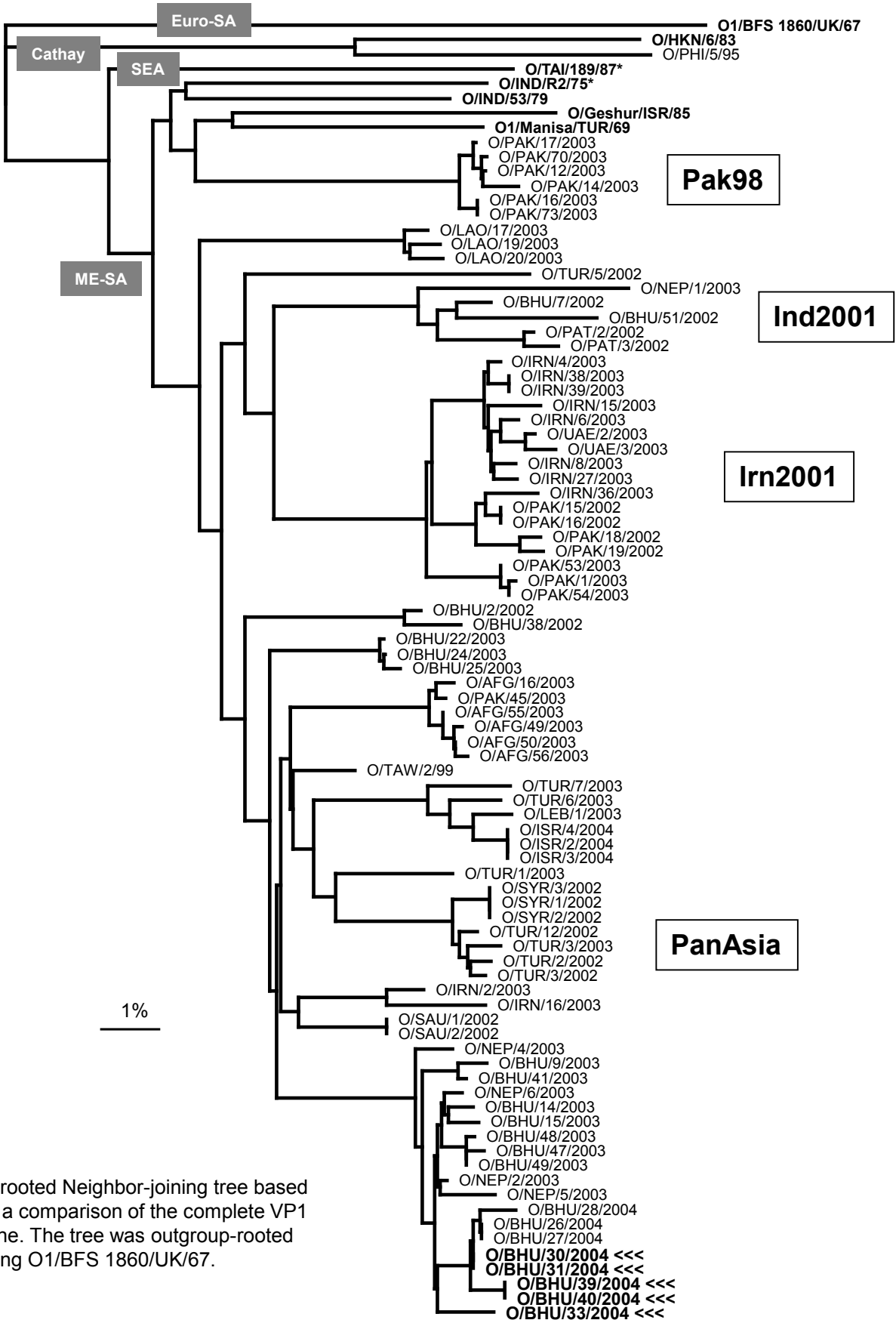
**Report from the Molecular Epidemiology Section of the Dept. of Exotic Disease Control to
the Head of the World Reference Laboratory for FMD (Non-QAU Form)**

Serotype: O	Report date: 12/05/2004						
WRL Ref No: BHU/39/2004	Reported by: N.J. Knowles						
Date collected: 07/04/2004	Checked by: J.-F. Valarcher						
Date received: 27/04/2004							
Species: Bovine	Topotype: ME-SA						
Material used: BTy1	Genotype/strain: PanAsia						
Region sequenced: VP1	Sequence filename: BHU04-39.SEQ						
RT-PCR primers: O-1C272F/NK61	Date sequence last updated: 11/05/2004						
No. of Nt determined: 639	Total no. of comparisons: 1400						
No. of ambiguities: 0							
Gene length: 639							
Comments:							
Ten Most Closely Related Viruses							
Pos.	Virus name	Filename	No. nt compared	No. nt matched	No. of ambiguities	% Identity	% Difference
1	O/BHU/40/2004	BHU04-40	639	639	0	100.00	0.00
2	O/BHU/31/2004	BHU04-31	639	635	0	99.37	0.63
3	O/BHU/30/2004	BHU04-30	639	635	0	99.37	0.63
4	O/BHU/26/2004	BHU04-26	639	634	0	99.22	0.78
5	O/BHU/27/2004	BHU04-27	638	633	1	99.22	0.78
6	O/BHU/28/2004	BHU04-28	638	629	1	98.59	1.41
7	O/NEP/2/2003	NEP03-02	638	629	1	98.59	1.41
8	O/NEP/6/2003	NEP03-06	639	628	0	98.28	1.72
9	O/BHU/49/2003	BHU03-49	639	627	0	98.12	1.88
10	O/BHU/14/2003	BHU03-14	623	611	0	98.07	1.93
Relationships to Reference Virus Strains							
Pos.	Virus name	Filename	No. nt compared	No. nt matched	No. of ambiguities	% Identity	% Difference
1	O/TAW/2/99	TAW99-02	639	604	0	94.52	5.48
2	O/IND/53/79	IND79A53	639	567	0	88.73	11.27
3	O/IND/R2/75*	IND75--A	639	566	0	88.58	11.42
4	O1/Manisa/TUR/69	TUR69--E	639	561	0	87.79	12.21
5	O/TAI/189/87*	TAI87-AC	639	554	0	86.70	13.30
6	O/ISR/1/88	ISR88-01	193	165	5	85.49	14.51
7	O/MOR/1/91	MOR91-01	207	176	3	85.02	14.98
8	O/PHI/5/95	PHI95-05	516	416	6	80.62	19.38
9	O/HKN/6/83	HKN83-06	637	511	2	80.22	19.78
10	O1/BFS 1860/UK/67	UKG67--A	639	503	0	78.72	21.28
nt, nucleotides							
*, not a WRLFMD reference number							

**Report from the Molecular Epidemiology Section of the Dept. of Exotic Disease Control to
the Head of the World Reference Laboratory for FMD (Non-QAU Form)**

Serotype: O	Report date: 12/05/2004						
WRL Ref No: BHU/40/2004	Reported by: N.J. Knowles						
Date collected: 07/04/2004	Checked by: J.-F. Valarcher						
Date received: 27/04/2004							
Species: Bovine	Topotype: ME-SA						
Material used: BTy1	Genotype/strain: PanAsia						
Region sequenced: VP1	Sequence filename: BHU04-40.SEQ						
RT-PCR primers: O-1C272F/NK61	Date sequence last updated: 11/05/2004						
No. of Nt determined: 639	Total no. of comparisons: 1400						
No. of ambiguities: 0							
Gene length: 639							
Comments:							
Ten Most Closely Related Viruses							
Pos.	Virus name	Filename	No. nt compared	No. nt matched	No. of ambiguities	% Identity	% Difference
1	O/BHU/39/2004	BHU04-39	639	639	0	100.00	0.00
2	O/BHU/31/2004	BHU04-31	639	635	0	99.37	0.63
3	O/BHU/30/2004	BHU04-30	639	635	0	99.37	0.63
4	O/BHU/26/2004	BHU04-26	639	634	0	99.22	0.78
5	O/BHU/27/2004	BHU04-27	638	633	1	99.22	0.78
6	O/BHU/28/2004	BHU04-28	638	629	1	98.59	1.41
7	O/NEP/2/2003	NEP03-02	638	629	1	98.59	1.41
8	O/NEP/6/2003	NEP03-06	639	628	0	98.28	1.72
9	O/BHU/49/2003	BHU03-49	639	627	0	98.12	1.88
10	O/BHU/14/2003	BHU03-14	623	611	0	98.07	1.93
Relationships to Reference Virus Strains							
Pos.	Virus name	Filename	No. nt compared	No. nt matched	No. of ambiguities	% Identity	% Difference
1	O/TAW/2/99	TAW99-02	639	604	0	94.52	5.48
2	O/IND/53/79	IND79A53	639	567	0	88.73	11.27
3	O/IND/R2/75*	IND75--A	639	566	0	88.58	11.42
4	O1/Manisa/TUR/69	TUR69--E	639	561	0	87.79	12.21
5	O/TAI/189/87*	TAI87-AC	639	554	0	86.70	13.30
6	O/ISR/1/88	ISR88-01	193	165	5	85.49	14.51
7	O/MOR/1/91	MOR91-01	207	176	3	85.02	14.98
8	O/PHI/5/95	PHI95-05	516	416	6	80.62	19.38
9	O/HKN/6/83	HKN83-06	637	511	2	80.22	19.78
10	O1/BFS 1860/UK/67	UKG67--A	639	503	0	78.72	21.28
nt, nucleotides							
*, not a WRLFMD reference number							

Report on: O BHUTAN 2004



Unrooted Neighbor-joining tree based on a comparison of the complete VP1 gene. The tree was outgroup-rooted using O1/BFS 1860/UK/67.

* not a WRLFMD ref. no.