

Serotype: O	Report date: 04/08/2008
WRL Ref No: PAK/68/2007	Reported by: N.J. Knowles
Sender Ref: 517	Checked by: D.P. King
Date collected: 03/12/2007	
Date received by WRLFMD: 12/05/2008	Topotype: ME-SA
Date received for sequencing: 14/05/2008	Genotype/strain: PanAsia-2
Species: Water buffalo	Sequence filename: PAK07-68.SEQ
Material used: BTy1	Date sequence last updated: 04/08/2008
Region sequenced: VP1	Total no. of comparisons: 1768
RT-PCR primers: O-1C244F/EUR-2B52R;	Min. no. of nt for comparison: 300
O-1C272F/EUR-2B52R;	Total turn-around time: 84 days
O-1C283F/EUR-2B52R	Sequencing time: 82 days
No. of Nt determined: 639	
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/PAK/66/2007 (B)	PAK07B66	639	639	0	100	0
2	O/PAK/69/2007	PAK07-69	639	639	0	100	0
3	O/PAK/70/2007	PAK07-70	639	637	0	99.69	0.31
4	O/PAK/1/2008	PAK08-01	639	631	0	98.75	1.25
5	O/PAK/13/2005	PAK05-13	639	622	0	97.34	2.66
6	O/NEP/2/2003	NEP03-02	638	618	1	96.87	3.13
7	O/PAK/9/2005	PAK05-09	639	619	0	96.87	3.13
8	O/MAY/2/2004	MAY04-02	608	588	0	96.71	3.29
9	O/PAK/38/2005	PAK05-38	639	618	0	96.71	3.29
10	O/NEP/6/2003 (DQ165061)	NEP03-06	639	617	0	96.56	3.44

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 (AJ294927)	TAW99-02	639	602	0	94.21	5.79
2	O/IND/53/79 [AF292107]	IND79A53	639	564	0	88.26	11.74
3	O1/Manisa/TUR/69 (AJ251477)	TUR69--E	639	564	0	88.26	11.74
4	O/IND/R2/75* [AF204276]	IND75--A	639	563	0	88.11	11.89
5	O/ISR/2/88 (DQ164899)	ISR88-02	639	558	0	87.32	12.68
6	O/TAI/189/87* [TRRL]	TAI87-AC	639	556	0	87.01	12.99
7	O/MOR/1/91	MOR91-01	639	553	0	86.54	13.46
8	O/PHI/5/95 (DQ164946)	PHI95-05	639	519	0	81.22	18.78
9	O/HKN/6/83 (AJ294919)	HKN83-06	637	511	2	80.22	19.78
10	O1/BFS 1860/UK/67 (J02185)	UKG67--A	639	510	0	79.81	20.19

nt, nucleotides

*, not a WRLFMD reference number

Serotype: O	Report date: 04/08/2008
WRL Ref No: PAK/69/2007	Reported by: N.J. Knowles
Sender Ref: 520	Checked by: D.P. King
Date collected: 07/12/2007	
Date received by WRLFMD: 12/05/2008	Topotype: ME-SA
Date received for sequencing: 13/05/2008	Genotype/strain: PanAsia-2
Species: Water buffalo	Sequence filename: PAK07-69.SEQ
Material used: BTy1	Date sequence last updated: 04/08/2008
Region sequenced: VP1	Total no. of comparisons: 1768
RT-PCR primers: O-1C244F/EUR-2B52R;	Min. no. of nt for comparison: 300
O-1C272F/EUR-2B52R;	Total turn-around time: 84 days
O-1C283F/EUR-2B52R	Sequencing time: 83 days
No. of Nt determined: 639	
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/PAK/66/2007 (B)	PAK07B66	639	639	0	100	0
2	O/PAK/68/2007	PAK07-68	639	639	0	100	0
3	O/PAK/70/2007	PAK07-70	639	637	0	99.69	0.31
4	O/PAK/1/2008	PAK08-01	639	631	0	98.75	1.25
5	O/PAK/13/2005	PAK05-13	639	622	0	97.34	2.66
6	O/NEP/2/2003	NEP03-02	638	618	1	96.87	3.13
7	O/PAK/9/2005	PAK05-09	639	619	0	96.87	3.13
8	O/MAY/2/2004	MAY04-02	608	588	0	96.71	3.29
9	O/PAK/38/2005	PAK05-38	639	618	0	96.71	3.29
10	O/NEP/6/2003 (DQ165061)	NEP03-06	639	617	0	96.56	3.44

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 (AJ294927)	TAW99-02	639	602	0	94.21	5.79
2	O/IND/53/79 [AF292107]	IND79A53	639	564	0	88.26	11.74
3	O1/Manisa/TUR/69 (AJ251477)	TUR69--E	639	564	0	88.26	11.74
4	O/IND/R2/75* [AF204276]	IND75--A	639	563	0	88.11	11.89
5	O/ISR/2/88 (DQ164899)	ISR88-02	639	558	0	87.32	12.68
6	O/TAI/189/87* [TRRL]	TAI87-AC	639	556	0	87.01	12.99
7	O/MOR/1/91	MOR91-01	639	553	0	86.54	13.46
8	O/PHI/5/95 (DQ164946)	PHI95-05	639	519	0	81.22	18.78
9	O/HKN/6/83 (AJ294919)	HKN83-06	637	511	2	80.22	19.78
10	O1/BFS 1860/UK/67 (J02185)	UKG67--A	639	510	0	79.81	20.19

nt, nucleotides

*, not a WRLFMD reference number

Serotype: O	Report date: 04/08/2008
WRL Ref No: PAK/70/2007	Reported by: N.J. Knowles
Sender Ref: 521	Checked by: D.P. King
Date collected: 07/12/2007	
Date received by WRLFMD: 12/05/2008	Topotype: ME-SA
Date received for sequencing: 14/05/2008	Genotype/strain: PanAsia-2
Species: Water buffalo	Sequence filename: PAK07-70.SEQ
Material used: BTy1	Date sequence last updated: 04/08/2008
Region sequenced: VP1	Total no. of comparisons: 1768
RT-PCR primers: O-1C244F/EUR-2B52R;	Min. no. of nt for comparison: 300
O-1C272F/EUR-2B52R;	Total turn-around time: 84 days
O-1C283F/EUR-2B52R	Sequencing time: 82 days
No. of Nt determined: 639	
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/PAK/66/2007 (B)	PAK07B66	639	637	0	99.69	0.31
2	O/PAK/68/2007	PAK07-68	639	637	0	99.69	0.31
3	O/PAK/69/2007	PAK07-69	639	637	0	99.69	0.31
4	O/PAK/1/2008	PAK08-01	639	631	0	98.75	1.25
5	O/PAK/13/2005	PAK05-13	639	622	0	97.34	2.66
6	O/NEP/2/2003	NEP03-02	638	618	1	96.87	3.13
7	O/PAK/9/2005	PAK05-09	639	619	0	96.87	3.13
8	O/MAY/2/2004	MAY04-02	608	588	0	96.71	3.29
9	O/PAK/38/2005	PAK05-38	639	618	0	96.71	3.29
10	O/NEP/6/2003 (DQ165061)	NEP03-06	639	617	0	96.56	3.44

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 (AJ294927)	TAW99-02	639	604	0	94.52	5.48
2	O/IND/53/79 [AF292107]	IND79A53	639	566	0	88.58	11.42
3	O1/Manisa/TUR/69 (AJ251477)	TUR69--E	639	566	0	88.58	11.42
4	O/IND/R2/75* [AF204276]	IND75--A	639	565	0	88.42	11.58
5	O/ISR/2/88 (DQ164899)	ISR88-02	639	558	0	87.32	12.68
6	O/TAI/189/87* [TRRL]	TAI87-AC	639	558	0	87.32	12.68
7	O/MOR/1/91	MOR91-01	639	553	0	86.54	13.46
8	O/PHI/5/95 (DQ164946)	PHI95-05	639	521	0	81.53	18.47
9	O/HKN/6/83 (AJ294919)	HKN83-06	637	513	2	80.53	19.47
10	O1/BFS 1860/UK/67 (J02185)	UKG67--A	639	512	0	80.13	19.87

nt, nucleotides

*, not a WRLFMD reference number

Serotype: O	Report date: 04/08/2008
WRL Ref No: PAK/71/2007	Reported by: N.J. Knowles
Sender Ref: 532	Checked by: D.P. King
Date collected: 08/12/2007	
Date received by WRLFMD: 12/05/2008	Topotype: ME-SA
Date received for sequencing: 14/05/2008	Genotype/strain: PanAsia-2
Species: Cattle	Sequence filename: PAK07-71.SEQ
Material used: BTy1	Date sequence last updated: 04/08/2008
Region sequenced: VP1	Total no. of comparisons: 1768
RT-PCR primers: O-1C244F/EUR-2B52R;	Min. no. of nt for comparison: 300
O-1C272F/EUR-2B52R;	Total turn-around time: 84 days
O-1C283F/EUR-2B52R	Sequencing time: 82 days
No. of Nt determined: 639	
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/KUW/1/2008	KUW08-01	639	633	0	99.06	0.94
2	O/KUW/10/2008	KUW08-10	639	633	0	99.06	0.94
3	O/KUW/2/2008	KUW08-02	639	633	0	99.06	0.94
4	O/KUW/6/2008	KUW08-06	639	633	0	99.06	0.94
5	O/KUW/7/2008	KUW08-07	639	633	0	99.06	0.94
6	O/KUW/8/2008	KUW08-08	639	633	0	99.06	0.94
7	O/SAU/6/2008	SAU08-06	639	633	0	99.06	0.94
8	O/IRN/27/2007	IRN07-27	639	632	0	98.9	1.1
9	O/KUW/3/2008	KUW08-03	639	630	0	98.59	1.41
10	O/KUW/4/2008	KUW08-04	639	630	0	98.59	1.41

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 (AJ294927)	TAW99-02	639	597	0	93.43	6.57
2	O1/Manisa/TUR/69 (AJ251477)	TUR69--E	639	566	0	88.58	11.42
3	O/IND/53/79 [AF292107]	IND79A53	639	564	0	88.26	11.74
4	O/IND/R2/75* [AF204276]	IND75--A	639	562	0	87.95	12.05
5	O/TAI/189/87* [TRRL]	TAI87-AC	639	552	0	86.38	13.62
6	O/ISR/2/88 (DQ164899)	ISR88-02	639	550	0	86.07	13.93
7	O/MOR/1/91	MOR91-01	639	546	0	85.45	14.55
8	O/PHI/5/95 (DQ164946)	PHI95-05	639	525	0	82.16	17.84
9	O/HKN/6/83 (AJ294919)	HKN83-06	637	517	2	81.16	18.84
10	O1/BFS 1860/UK/67 (J02185)	UKG67--A	639	510	0	79.81	20.19

nt, nucleotides

*, not a WRLFMD reference number

Serotype: O	Report date: 04/08/2008
WRL Ref No: PAK/3/2008	Reported by: N.J. Knowles
Sender Ref: 516	Checked by: D.P. King
Date collected: 08/01/2008	
Date received by WRLFMD: 12/05/2008	Topotype: ME-SA
Date received for sequencing: 16/05/2008	Genotype/strain: PanAsia-2
Species: Cattle	Sequence filename: PAK08-03.SEQ
Material used: BTy2	Date sequence last updated: 04/08/2008
Region sequenced: VP1	Total no. of comparisons: 1768
RT-PCR primers: O-1C244F/EUR-2B52R;	Min. no. of nt for comparison: 300
O-1C272F/EUR-2B52R;	Total turn-around time: 84 days
O-1C283F/EUR-2B52R	Sequencing time: 80 days
No. of Nt determined: 639	
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/PAK/2/2008	PAK08-02	639	639	0	100	0
2	O/PAK/22/2007	PAK07-22	639	637	0	99.69	0.31
3	O/PAK/23/2007	PAK07-23	639	637	0	99.69	0.31
4	O/PAK/28/2007	PAK07-28	639	636	0	99.53	0.47
5	O/PAK/50/2007	PAK07-50	639	636	0	99.53	0.47
6	O/PAK/61/2006	PAK06-61	639	636	0	99.53	0.47
7	O/PAK/49/2007	PAK07-49	639	634	0	99.22	0.78
8	O/IRN/56/2006	IRN06-56	639	631	0	98.75	1.25
9	O/PAK/10/2006	PAK06-10	639	631	0	98.75	1.25
10	O/PAK/16/2006	PAK06-16	639	631	0	98.75	1.25

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 (AJ294927)	TAW99-02	639	600	0	93.9	6.1
2	O/IND/53/79 [AF292107]	IND79A53	639	569	0	89.05	10.95
3	O/IND/R2/75* [AF204276]	IND75--A	639	566	0	88.58	11.42
4	O1/Manisa/TUR/69 (AJ251477)	TUR69--E	639	564	0	88.26	11.74
5	O/ISR/2/88 (DQ164899)	ISR88-02	639	555	0	86.85	13.15
6	O/MOR/1/91	MOR91-01	639	553	0	86.54	13.46
7	O/TAI/189/87* [TRRL]	TAI87-AC	639	552	0	86.38	13.62
8	O/PHI/5/95 (DQ164946)	PHI95-05	639	520	0	81.38	18.62
9	O/HKN/6/83 (AJ294919)	HKN83-06	637	512	2	80.38	19.62
10	O1/BFS 1860/UK/67 (J02185)	UKG67--A	639	513	0	80.28	19.72

nt, nucleotides

*, not a WRLFMD reference number

Serotype: O	Report date: 04/08/2008
WRL Ref No: PAK/6/2008	Reported by: N.J. Knowles
Sender Ref: 531	Checked by: D.P. King
Date collected: 24/01/2008	
Date received by WRLFMD: 12/05/2008	Topotype: ME-SA
Date received for sequencing: 14/05/2008	Genotype/strain: PanAsia-2
Species: Not known	Sequence filename: PAK08-06.SEQ
Material used: BTy1	Date sequence last updated: 04/08/2008
Region sequenced: VP1	Total no. of comparisons: 1768
RT-PCR primers: O-1C244F/EUR-2B52R;	Min. no. of nt for comparison: 300
O-1C272F/EUR-2B52R;	Total turn-around time: 84 days
O-1C283F/EUR-2B52R	Sequencing time: 82 days
No. of Nt determined: 639	
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/PAK/28/2007	PAK07-28	639	633	0	99.06	0.94
2	O/PAK/49/2007	PAK07-49	639	633	0	99.06	0.94
3	O/PAK/50/2007	PAK07-50	639	633	0	99.06	0.94
4	O/PAK/22/2007	PAK07-22	639	632	0	98.9	1.1
5	O/PAK/23/2007	PAK07-23	639	632	0	98.9	1.1
6	O/PAK/61/2006	PAK06-61	639	631	0	98.75	1.25
7	O/PAK/2/2008	PAK08-02	639	630	0	98.59	1.41
8	O/PAK/3/2008	PAK08-03	639	630	0	98.59	1.41
9	O/IRN/56/2006	IRN06-56	639	628	0	98.28	1.72
10	O/PAK/10/2006	PAK06-10	639	628	0	98.28	1.72

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 (AJ294927)	TAW99-02	639	599	0	93.74	6.26
2	O/IND/53/79 [AF292107]	IND79A53	639	566	0	88.58	11.42
3	O/IND/R2/75* [AF204276]	IND75--A	639	564	0	88.26	11.74
4	O1/Manisa/TUR/69 (AJ251477)	TUR69--E	639	564	0	88.26	11.74
5	O/ISR/2/88 (DQ164899)	ISR88-02	639	557	0	87.17	12.83
6	O/MOR/1/91	MOR91-01	639	553	0	86.54	13.46
7	O/TAI/189/87* [TRRL]	TAI87-AC	639	551	0	86.23	13.77
8	O/PHI/5/95 (DQ164946)	PHI95-05	639	518	0	81.06	18.94
9	O/HKN/6/83 (AJ294919)	HKN83-06	637	514	2	80.69	19.31
10	O1/BFS 1860/UK/67 (J02185)	UKG67--A	639	513	0	80.28	19.72

nt, nucleotides

*, not a WRLFMD reference number

Report on FMDV O from Pakistan in 2007-2008

Software: MEGA 4.0
No. of Taxa : 268
Data File : n:\evd\meg\db\fmv\o\PAK2008b.meg
Data Title : O Pakistan 2007-2008
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, K. Ebert & J. Wadsworth, 5 August 2008

