

Serotype: O	Report date: 15/06/2008
WRL Ref No: PAK/2/2007	
Sender Ref: 47	
Date collected: 15/01/2007	
Date received by WRLFMD: 01/06/2007	Topotype: ME-SA
Date received for sequencing: 06/07/2007	Genotype/strain: PanAsia-2
Species: Water buffalo	Sequence filename: PAK07-02.SEQ
Material used: BTy1	Date sequence last updated: 25/07/2007
Region sequenced: VP1	Total no. of comparisons: 1753
RT-PCR primers: O-1C244F/EUR-2B52R; O-1C272F/EUR-2B52R	Min. no. of nt for comparison: 300
No. of Nt determined: 639	Total turn-around time: 380 days
No. of ambiguities: 0	Sequencing time: 345 days
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/26/2007	PAK07-26	639	639	0	100	0
2	O/PAK/40/2007	PAK07-40	639	639	0	100	0
3	O/PAK/42/2007	PAK07-42	639	639	0	100	0
4	O/PAK/43/2007	PAK07-43	639	639	0	100	0
5	O/PAK/45/2007	PAK07-45	639	639	0	100	0
6	O/PAK/46/2007	PAK07-46	639	639	0	100	0
7	O/PAK/24/2007	PAK07-24	639	638	0	99.84	0.16
8	O/PAK/44/2007	PAK07-44	639	638	0	99.84	0.16
9	O/PAK/3/2007	PAK07-03	639	636	0	99.53	0.47
10	O/PAK/53/2007	PAK07-53	639	636	0	99.53	0.47

#### 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	571	0	89.36	10.64
3	O/IND/R2/75* [AF204276]	IND75--A	639	567	0	88.73	11.27
4	O1/Manisa/TUR/69 (AJ251477)	TUR69--E	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	555	0	86.85	13.15
7	O/MOR/1/91	MOR91-01	639	554	0	86.7	13.3
8	O/PHI/5/95 (DQ164946)	PHI95-05	639	518	0	81.06	18.94
9	O/HKN/6/83 (AJ294919)	HKN83-06	637	510	2	80.06	19.94
10	O1/BFS 1860/UK/67 (J02185)	UKG67--A	639	511	0	79.97	20.03

nt, nucleotides

\*, not a WRLFMD reference number

Serotype: O	Report date: 15/06/2008
WRL Ref No: PAK/3/2007	
Sender Ref: 59	
Date collected: 15/01/2007	
Date received by WRLFMD: 01/06/2007	Topotype: ME-SA
Date received for sequencing: 06/07/2007	Genotype/strain: PanAsia-2
Species: Cattle	Sequence filename: PAK07-03.SEQ
Material used: BTy1	Date sequence last updated: 25/07/2007
Region sequenced: VP1	Total no. of comparisons: 1753
RT-PCR primers: O-1C244F/EUR-2B52R; O-1C272F/EUR-2B52R	Min. no. of nt for comparison: 300
No. of Nt determined: 639	Total turn-around time: 380 days
No. of ambiguities: 0	Sequencing time: 345 days
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/53/2007	PAK07-53	639	639	0	100	0
2	O/PAK/10/2006	PAK06-10	639	637	0	99.69	0.31
3	O/PAK/16/2006	PAK06-16	639	637	0	99.69	0.31
4	O/PAK/24/2007	PAK07-24	639	637	0	99.69	0.31
5	O/PAK/4/2006	PAK06-04	639	637	0	99.69	0.31
6	O/PAK/6/2006	PAK06-06	639	637	0	99.69	0.31
7	O/PAK/8/2006	PAK06-08	639	637	0	99.69	0.31
8	O/PAK/9/2006	PAK06-09	639	637	0	99.69	0.31
9	O/IRN/11/2006	IRN06-11	639	636	0	99.53	0.47
10	O/IRN/29/2006	IRN06-29	639	636	0	99.53	0.47

#### 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	603	0	94.37	5.63
2	O/IND/53/79 [AF292107]	IND79A53	639	572	0	89.51	10.49
3	O/IND/R2/75* [AF204276]	IND75--A	639	568	0	88.89	11.11
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/TAI/189/87* [TRRL]	TAI87-AC	639	555	0	86.85	13.15
7	O/MOR/1/91	MOR91-01	639	553	0	86.54	13.46
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	511	0	79.97	20.03

nt, nucleotides

\*, not a WRLFMD reference number

Serotype: O	Report date: 15/06/2008
WRL Ref No: PAK/5/2007	
Sender Ref: 61	
Date collected: 15/01/2007	Topotype: ME-SA
Date received by WRLFMD: 01/06/2007	Genotype/strain: PanAsia-2
Date received for sequencing: 06/07/2007	Sequence filename: PAK07-05.SEQ
Species: Cattle	Date sequence last updated: 25/07/2007
Material used: BTy1	Total no. of comparisons: 1753
Region sequenced: VP1	Min. no. of nt for comparison: 300
RT-PCR primers: O-1C244F/EUR-2B52R; O-1C272F/EUR-2B52R	Total turn-around time: 380 days
No. of Nt determined: 639	Sequencing time: 345 days
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/31/2007	PAK07-31	639	637	0	99.69	0.31
2	O/PAK/10/2006	PAK06-10	639	634	0	99.22	0.78
3	O/PAK/16/2006	PAK06-16	639	634	0	99.22	0.78
4	O/PAK/3/2007	PAK07-03	639	634	0	99.22	0.78
5	O/PAK/4/2006	PAK06-04	639	634	0	99.22	0.78
6	O/PAK/53/2007	PAK07-53	639	634	0	99.22	0.78
7	O/PAK/6/2006	PAK06-06	639	634	0	99.22	0.78
8	O/PAK/8/2006	PAK06-08	639	634	0	99.22	0.78
9	O/PAK/9/2006	PAK06-09	639	634	0	99.22	0.78
10	O/IRN/11/2006	IRN06-11	639	633	0	99.06	0.94

#### 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	603	0	94.37	5.63
2	O/IND/53/79 [AF292107]	IND79A53	639	571	0	89.36	10.64
3	O/IND/R2/75* [AF204276]	IND75--A	639	567	0	88.73	11.27
4	O1/Manisa/TUR/69 (AJ251477)	TUR69--E	639	563	0	88.11	11.89
5	O/ISR/2/88 (DQ164899)	ISR88-02	639	557	0	87.17	12.83
6	O/TAI/189/87* [TRRL]	TAI87-AC	639	554	0	86.7	13.3
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	513	0	80.28	19.72

nt, nucleotides

\*, not a WRLFMD reference number

Serotype: O	Report date: 15/06/2008
WRL Ref No: PAK/7/2007	
Sender Ref: 62	
Date collected: 17/01/2007	
Date received by WRLFMD: 01/06/2007	Topotype: ME-SA
Date received for sequencing: 06/07/2007	Genotype/strain: PanAsia-2
Species: Water buffalo	Sequence filename: PAK07-07.SEQ
Material used: BTy1	Date sequence last updated: 25/07/2007
Region sequenced: VP1	Total no. of comparisons: 1753
RT-PCR primers: O-1C244F/EUR-2B52R; O-1C272F/EUR-2B52R	Min. no. of nt for comparison: 300
No. of Nt determined: 639	Total turn-around time: 380 days
No. of ambiguities: 0	Sequencing time: 345 days
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/8/2007	PAK07-08	639	636	0	99.53	0.47
2	O/IRN/22/2007	IRN07-22	639	635	0	99.37	0.63
3	O/PAK/15/2007	PAK07-15	639	635	0	99.37	0.63
4	O/PAK/21/2007	PAK07-21	639	635	0	99.37	0.63
5	O/PAK/35/2005	PAK05-35	639	635	0	99.37	0.63
6	O/PAK/56/2007	PAK07-56	639	635	0	99.37	0.63
7	O/PAK/60/2006	PAK06-60	639	635	0	99.37	0.63
8	O/PAK/63/2006	PAK06-63	639	635	0	99.37	0.63
9	O/PAK/73/2006	PAK06-73	639	635	0	99.37	0.63
10	O/PAK/33/2005	PAK05-33	639	634	0	99.22	0.78

#### 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	567	0	88.73	11.27
3	O1/Manisa/TUR/69 (AJ251477)	TUR69--E	639	565	0	88.42	11.58
4	O/IND/R2/75* [AF204276]	IND75--A	639	564	0	88.26	11.74
5	O/TAI/189/87* [TRRL]	TAI87-AC	639	561	0	87.79	12.21
6	O/ISR/2/88 (DQ164899)	ISR88-02	639	550	0	86.07	13.93
7	O/MOR/1/91	MOR91-01	639	548	0	85.76	14.24
8	O/PHI/5/95 (DQ164946)	PHI95-05	639	525	0	82.16	17.84
9	O/HKN/6/83 (AJ294919)	HKN83-06	637	516	2	81	19
10	O1/BFS 1860/UK/67 (J02185)	UKG67--A	639	509	0	79.66	20.34

nt, nucleotides

\*, not a WRLFMD reference number

Serotype: O	Report date: 15/06/2008
WRL Ref No: PAK/8/2007	
Sender Ref: 63	
Date collected: 17/01/2007	
Date received by WRLFMD: 01/06/2007	Topotype: ME-SA
Date received for sequencing: 06/07/2007	Genotype/strain: PanAsia-2
Species: Cattle	Sequence filename: PAK07-08.SEQ
Material used: BTy1	Date sequence last updated: 25/07/2007
Region sequenced: VP1	Total no. of comparisons: 1753
RT-PCR primers: O-1C244F/EUR-2B52R; O-1C272F/EUR-2B52R	Min. no. of nt for comparison: 300
No. of Nt determined: 639	Total turn-around time: 380 days
No. of ambiguities: 0	Sequencing time: 345 days
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/IRN/22/2007	IRN07-22	639	636	0	99.53	0.47
2	O/PAK/15/2007	PAK07-15	639	636	0	99.53	0.47
3	O/PAK/21/2007	PAK07-21	639	636	0	99.53	0.47
4	O/PAK/35/2005	PAK05-35	639	636	0	99.53	0.47
5	O/PAK/56/2007	PAK07-56	639	636	0	99.53	0.47
6	O/PAK/60/2006	PAK06-60	639	636	0	99.53	0.47
7	O/PAK/63/2006	PAK06-63	639	636	0	99.53	0.47
8	O/PAK/7/2007	PAK07-07	639	636	0	99.53	0.47
9	O/PAK/73/2006	PAK06-73	639	636	0	99.53	0.47
10	O/PAK/33/2005	PAK05-33	639	635	0	99.37	0.63

#### 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	601	0	94.05	5.95
2	O/IND/53/79 [AF292107]	IND79A53	639	569	0	89.05	10.95
3	O1/Manisa/TUR/69 (AJ251477)	TUR69--E	639	567	0	88.73	11.27
4	O/IND/R2/75* [AF204276]	IND75--A	639	564	0	88.26	11.74
5	O/TAI/189/87* [TRRL]	TAI87-AC	639	563	0	88.11	11.89
6	O/ISR/2/88 (DQ164899)	ISR88-02	639	552	0	86.38	13.62
7	O/MOR/1/91	MOR91-01	639	550	0	86.07	13.93
8	O/PHI/5/95 (DQ164946)	PHI95-05	639	527	0	82.47	17.53
9	O/HKN/6/83 (AJ294919)	HKN83-06	637	518	2	81.32	18.68
10	O1/BFS 1860/UK/67 (J02185)	UKG67--A	639	511	0	79.97	20.03

nt, nucleotides

\*, not a WRLFMD reference number

Serotype: O	Report date: 15/06/2008
WRL Ref No: PAK/10/2007	
Sender Ref: 67	
Date collected: 20/01/2007	
Date received by WRLFMD: 01/06/2007	Topotype: ME-SA
Date received for sequencing: 06/07/2007	Genotype/strain: PanAsia-2
Species: Cattle	Sequence filename: PAK07-10.SEQ
Material used: BTy1	Date sequence last updated: 25/07/2007
Region sequenced: VP1	Total no. of comparisons: 1753
RT-PCR primers: O-1C244F/EUR-2B52R; O-1C272F/EUR-2B52R	Min. no. of nt for comparison: 300
No. of Nt determined: 639	Total turn-around time: 380 days
No. of ambiguities: 0	Sequencing time: 345 days
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/11/2007	PAK07-11	639	639	0	100	0
2	O/IRN/12/2006	IRN06-12	639	630	0	98.59	1.41
3	O/PAK/10/2006	PAK06-10	639	630	0	98.59	1.41
4	O/PAK/16/2006	PAK06-16	639	630	0	98.59	1.41
5	O/PAK/4/2006	PAK06-04	639	630	0	98.59	1.41
6	O/PAK/6/2006	PAK06-06	639	630	0	98.59	1.41
7	O/PAK/8/2006	PAK06-08	639	630	0	98.59	1.41
8	O/PAK/9/2006	PAK06-09	639	630	0	98.59	1.41
9	O/IRN/10/2006	IRN06-10	639	629	0	98.44	1.56
10	O/IRN/15/2006	IRN06-15	639	629	0	98.44	1.56

#### 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	596	0	93.27	6.73
2	O/IND/53/79 [AF292107]	IND79A53	639	565	0	88.42	11.58
3	O1/Manisa/TUR/69 (AJ251477)	TUR69--E	639	563	0	88.11	11.89
4	O/IND/R2/75* [AF204276]	IND75--A	639	561	0	87.79	12.21
5	O/ISR/2/88 (DQ164899)	ISR88-02	639	552	0	86.38	13.62
6	O/TAI/189/87* [TRRL]	TAI87-AC	639	551	0	86.23	13.77
7	O/MOR/1/91	MOR91-01	639	548	0	85.76	14.24
8	O/PHI/5/95 (DQ164946)	PHI95-05	639	518	0	81.06	18.94
9	O/HKN/6/83 (AJ294919)	HKN83-06	637	510	2	80.06	19.94
10	O1/BFS 1860/UK/67 (J02185)	UKG67--A	639	504	0	78.87	21.13

nt, nucleotides

\*, not a WRLFMD reference number

Serotype: O	Report date: 15/06/2008
WRL Ref No: PAK/11/2007	
Sender Ref: 68	
Date collected: 20/01/2007	
Date received by WRLFMD: 01/06/2007	Topotype: ME-SA
Date received for sequencing: 06/07/2007	Genotype/strain: PanAsia-2
Species: Cattle	Sequence filename: PAK07-11.SEQ
Material used: BTy1	Date sequence last updated: 25/07/2007
Region sequenced: VP1	Total no. of comparisons: 1753
RT-PCR primers: O-1C244F/EUR-2B52R; O-1C272F/EUR-2B52R	Min. no. of nt for comparison: 300
No. of Nt determined: 639	Total turn-around time: 380 days
No. of ambiguities: 0	Sequencing time: 345 days
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/10/2007	PAK07-10	639	639	0	100	0
2	O/IRN/12/2006	IRN06-12	639	630	0	98.59	1.41
3	O/PAK/10/2006	PAK06-10	639	630	0	98.59	1.41
4	O/PAK/16/2006	PAK06-16	639	630	0	98.59	1.41
5	O/PAK/4/2006	PAK06-04	639	630	0	98.59	1.41
6	O/PAK/6/2006	PAK06-06	639	630	0	98.59	1.41
7	O/PAK/8/2006	PAK06-08	639	630	0	98.59	1.41
8	O/PAK/9/2006	PAK06-09	639	630	0	98.59	1.41
9	O/IRN/10/2006	IRN06-10	639	629	0	98.44	1.56
10	O/IRN/15/2006	IRN06-15	639	629	0	98.44	1.56

#### 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	596	0	93.27	6.73
2	O/IND/53/79 [AF292107]	IND79A53	639	565	0	88.42	11.58
3	O1/Manisa/TUR/69 (AJ251477)	TUR69--E	639	563	0	88.11	11.89
4	O/IND/R2/75* [AF204276]	IND75--A	639	561	0	87.79	12.21
5	O/ISR/2/88 (DQ164899)	ISR88-02	639	552	0	86.38	13.62
6	O/TAI/189/87* [TRRL]	TAI87-AC	639	551	0	86.23	13.77
7	O/MOR/1/91	MOR91-01	639	548	0	85.76	14.24
8	O/PHI/5/95 (DQ164946)	PHI95-05	639	518	0	81.06	18.94
9	O/HKN/6/83 (AJ294919)	HKN83-06	637	510	2	80.06	19.94
10	O1/BFS 1860/UK/67 (J02185)	UKG67--A	639	504	0	78.87	21.13

nt, nucleotides

\*, not a WRLFMD reference number

Serotype: O	Report date: 15/06/2008
WRL Ref No: PAK/15/2007	
Sender Ref: 79	
Date collected: 26/01/2007	
Date received by WRLFMD: 01/06/2007	Topotype: ME-SA
Date received for sequencing: 06/07/2007	Genotype/strain: PanAsia-2
Species: Cattle	Sequence filename: PAK07-15.SEQ
Material used: BTy1	Date sequence last updated: 27/07/2007
Region sequenced: VP1	Total no. of comparisons: 1753
RT-PCR primers: O-1C272F/EUR-2B52R	Min. no. of nt for comparison: 300
No. of Nt determined: 639	Total turn-around time: 380 days
No. of ambiguities: 0	Sequencing time: 345 days
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/IRN/22/2007	IRN07-22	639	639	0	100	0
2	O/PAK/21/2007	PAK07-21	639	639	0	100	0
3	O/PAK/35/2005	PAK05-35	639	639	0	100	0
4	O/PAK/56/2007	PAK07-56	639	639	0	100	0
5	O/PAK/60/2006	PAK06-60	639	639	0	100	0
6	O/PAK/63/2006	PAK06-63	639	639	0	100	0
7	O/PAK/73/2006	PAK06-73	639	639	0	100	0
8	O/PAK/33/2005	PAK05-33	639	638	0	99.84	0.16
9	O/PAK/71/2006	PAK06-71	639	638	0	99.84	0.16
10	O/PAK/8/2007	PAK07-08	639	636	0	99.53	0.47

#### 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	568	0	88.89	11.11
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/TAI/189/87* [TRRL]	TAI87-AC	639	562	0	87.95	12.05
6	O/ISR/2/88 (DQ164899)	ISR88-02	639	551	0	86.23	13.77
7	O/MOR/1/91	MOR91-01	639	549	0	85.92	14.08
8	O/PHI/5/95 (DQ164946)	PHI95-05	639	526	0	82.32	17.68
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: 15/06/2008
WRL Ref No: PAK/20/2007	
Sender Ref: 101	
Date collected: 02/02/2007	
Date received by WRLFMD: 01/06/2007	Topotype: ME-SA
Date received for sequencing: 06/07/2007	Genotype/strain: PanAsia-2
Species: Cattle	Sequence filename: PAK07-20.SEQ
Material used: BTy1	Date sequence last updated: 25/07/2007
Region sequenced: VP1	Total no. of comparisons: 1753
RT-PCR primers: O-1C244F/EUR-2B52R; O-1C272F/EUR-2B52R	Min. no. of nt for comparison: 300
No. of Nt determined: 639	Total turn-around time: 380 days
No. of ambiguities: 0	Sequencing time: 345 days
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/KAZ/2007 (ARRIAH)	KAZ07-AA	639	630	0	98.59	1.41
2	O/PAK/10/2006	PAK06-10	639	630	0	98.59	1.41
3	O/PAK/16/2006	PAK06-16	639	630	0	98.59	1.41
4	O/PAK/4/2006	PAK06-04	639	630	0	98.59	1.41
5	O/PAK/6/2006	PAK06-06	639	630	0	98.59	1.41
6	O/PAK/8/2006	PAK06-08	639	630	0	98.59	1.41
7	O/PAK/9/2006	PAK06-09	639	630	0	98.59	1.41
8	O/IRN/12/2006	IRN06-12	639	628	0	98.28	1.72
9	O/IRN/56/2006	IRN06-56	639	628	0	98.28	1.72
10	O/PAK/11/2006	PAK06-11	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	597	0	93.43	6.57
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	563	0	88.11	11.89
5	O/ISR/2/88 (DQ164899)	ISR88-02	639	554	0	86.7	13.3
6	O/TAI/189/87* [TRRL]	TAI87-AC	639	553	0	86.54	13.46
7	O/MOR/1/91	MOR91-01	639	550	0	86.07	13.93
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	507	0	79.34	20.66

nt, nucleotides

\*, not a WRLFMD reference number

Serotype: O	Report date: 15/06/2008
WRL Ref No: PAK/21/2007	
Sender Ref: 102	
Date collected: 02/02/2007	
Date received by WRLFMD: 01/06/2007	Topotype: ME-SA
Date received for sequencing: 06/07/2007	Genotype/strain: PanAsia-2
Species: Cattle	Sequence filename: PAK07-21.SEQ
Material used: BTy1	Date sequence last updated: 25/07/2007
Region sequenced: VP1	Total no. of comparisons: 1753
RT-PCR primers: O-1C244F/EUR-2B52R; O-1C272F/EUR-2B52R	Min. no. of nt for comparison: 300
No. of Nt determined: 639	Total turn-around time: 380 days
No. of ambiguities: 0	Sequencing time: 345 days
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/IRN/22/2007	IRN07-22	639	639	0	100	0
2	O/PAK/15/2007	PAK07-15	639	639	0	100	0
3	O/PAK/35/2005	PAK05-35	639	639	0	100	0
4	O/PAK/56/2007	PAK07-56	639	639	0	100	0
5	O/PAK/60/2006	PAK06-60	639	639	0	100	0
6	O/PAK/63/2006	PAK06-63	639	639	0	100	0
7	O/PAK/73/2006	PAK06-73	639	639	0	100	0
8	O/PAK/33/2005	PAK05-33	639	638	0	99.84	0.16
9	O/PAK/71/2006	PAK06-71	639	638	0	99.84	0.16
10	O/PAK/8/2007	PAK07-08	639	636	0	99.53	0.47

#### 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	568	0	88.89	11.11
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/TAI/189/87* [TRRL]	TAI87-AC	639	562	0	87.95	12.05
6	O/ISR/2/88 (DQ164899)	ISR88-02	639	551	0	86.23	13.77
7	O/MOR/1/91	MOR91-01	639	549	0	85.92	14.08
8	O/PHI/5/95 (DQ164946)	PHI95-05	639	526	0	82.32	17.68
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: 15/06/2008
WRL Ref No: PAK/22/2007	
Sender Ref: 65	
Date collected: 06/02/2007	
Date received by WRLFMD: 01/06/2007	Topotype: ME-SA
Date received for sequencing: 06/07/2007	Genotype/strain: PanAsia-2
Species: Cattle	Sequence filename: PAK07-22.SEQ
Material used: BTy1	Date sequence last updated: 25/07/2007
Region sequenced: VP1	Total no. of comparisons: 1753
RT-PCR primers: O-1C244F/EUR-2B52R; O-1C272F/EUR-2B52R	Min. no. of nt for comparison: 300
No. of Nt determined: 639	Total turn-around time: 380 days
No. of ambiguities: 0	Sequencing time: 345 days
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/23/2007	PAK07-23	639	639	0	100	0
2	O/PAK/28/2007	PAK07-28	639	638	0	99.84	0.16
3	O/PAK/50/2007	PAK07-50	639	638	0	99.84	0.16
4	O/PAK/61/2006	PAK06-61	639	638	0	99.84	0.16
5	O/PAK/2/2008	PAK08-02	639	637	0	99.69	0.31
6	O/PAK/49/2007	PAK07-49	639	636	0	99.53	0.47
7	O/IRN/56/2006	IRN06-56	639	633	0	99.06	0.94
8	O/PAK/10/2006	PAK06-10	639	633	0	99.06	0.94
9	O/PAK/16/2006	PAK06-16	639	633	0	99.06	0.94
10	O/PAK/4/2006	PAK06-04	639	633	0	99.06	0.94

#### 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	569	0	89.05	10.95
3	O/IND/R2/75* [AF204276]	IND75--A	639	568	0	88.89	11.11
4	O1/Manisa/TUR/69 (AJ251477)	TUR69--E	639	566	0	88.58	11.42
5	O/ISR/2/88 (DQ164899)	ISR88-02	639	557	0	87.17	12.83
6	O/TAI/189/87* [TRRL]	TAI87-AC	639	554	0	86.7	13.3
7	O/MOR/1/91	MOR91-01	639	553	0	86.54	13.46
8	O/PHI/5/95 (DQ164946)	PHI95-05	639	520	0	81.38	18.62
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	512	0	80.13	19.87

nt, nucleotides

\*, not a WRLFMD reference number

Serotype: O	Report date: 15/06/2008
WRL Ref No: PAK/23/2007	
Sender Ref: 66	
Date collected: 06/02/2007	
Date received by WRLFMD: 01/06/2007	Topotype: ME-SA
Date received for sequencing: 06/07/2007	Genotype/strain: PanAsia-2
Species: Cattle	Sequence filename: PAK07-23.SEQ
Material used: BTy1	Date sequence last updated: 25/07/2007
Region sequenced: VP1	Total no. of comparisons: 1753
RT-PCR primers: O-1C244F/EUR-2B52R; O-1C272F/EUR-2B52R	Min. no. of nt for comparison: 300
No. of Nt determined: 639	Total turn-around time: 380 days
No. of ambiguities: 0	Sequencing time: 345 days
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/22/2007	PAK07-22	639	639	0	100	0
2	O/PAK/28/2007	PAK07-28	639	638	0	99.84	0.16
3	O/PAK/50/2007	PAK07-50	639	638	0	99.84	0.16
4	O/PAK/61/2006	PAK06-61	639	638	0	99.84	0.16
5	O/PAK/2/2008	PAK08-02	639	637	0	99.69	0.31
6	O/PAK/49/2007	PAK07-49	639	636	0	99.53	0.47
7	O/IRN/56/2006	IRN06-56	639	633	0	99.06	0.94
8	O/PAK/10/2006	PAK06-10	639	633	0	99.06	0.94
9	O/PAK/16/2006	PAK06-16	639	633	0	99.06	0.94
10	O/PAK/4/2006	PAK06-04	639	633	0	99.06	0.94

#### 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	569	0	89.05	10.95
3	O/IND/R2/75* [AF204276]	IND75--A	639	568	0	88.89	11.11
4	O1/Manisa/TUR/69 (AJ251477)	TUR69--E	639	566	0	88.58	11.42
5	O/ISR/2/88 (DQ164899)	ISR88-02	639	557	0	87.17	12.83
6	O/TAI/189/87* [TRRL]	TAI87-AC	639	554	0	86.7	13.3
7	O/MOR/1/91	MOR91-01	639	553	0	86.54	13.46
8	O/PHI/5/95 (DQ164946)	PHI95-05	639	520	0	81.38	18.62
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	512	0	80.13	19.87

nt, nucleotides

\*, not a WRLFMD reference number

Serotype: O	Report date: 15/06/2008
WRL Ref No: PAK/24/2007	
Sender Ref: 48	
Date collected: 08/02/2007	
Date received by WRLFMD: 01/06/2007	Topotype: ME-SA
Date received for sequencing: 06/07/2007	Genotype/strain: PanAsia-2
Species: Cattle	Sequence filename: PAK07-24.SEQ
Material used: BTy1	Date sequence last updated: 25/07/2007
Region sequenced: VP1	Total no. of comparisons: 1753
RT-PCR primers: O-1C244F/EUR-2B52R; O-1C272F/EUR-2B52R	Min. no. of nt for comparison: 300
No. of Nt determined: 639	Total turn-around time: 380 days
No. of ambiguities: 0	Sequencing time: 345 days
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/2/2007	PAK07-02	639	638	0	99.84	0.16
2	O/PAK/26/2007	PAK07-26	639	638	0	99.84	0.16
3	O/PAK/40/2007	PAK07-40	639	638	0	99.84	0.16
4	O/PAK/42/2007	PAK07-42	639	638	0	99.84	0.16
5	O/PAK/43/2007	PAK07-43	639	638	0	99.84	0.16
6	O/PAK/45/2007	PAK07-45	639	638	0	99.84	0.16
7	O/PAK/46/2007	PAK07-46	639	638	0	99.84	0.16
8	O/PAK/3/2007	PAK07-03	639	637	0	99.69	0.31
9	O/PAK/44/2007	PAK07-44	639	637	0	99.69	0.31
10	O/PAK/53/2007	PAK07-53	639	637	0	99.69	0.31

#### 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	601	0	94.05	5.95
2	O/IND/53/79 [AF292107]	IND79A53	639	572	0	89.51	10.49
3	O/IND/R2/75* [AF204276]	IND75--A	639	568	0	88.89	11.11
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/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	518	0	81.06	18.94
9	O/HKN/6/83 (AJ294919)	HKN83-06	637	510	2	80.06	19.94
10	O1/BFS 1860/UK/67 (J02185)	UKG67--A	639	511	0	79.97	20.03

nt, nucleotides

\*, not a WRLFMD reference number

Serotype: O	Report date: 15/06/2008
WRL Ref No: PAK/26/2007	
Sender Ref: 50	
Date collected: 08/02/2007	
Date received by WRLFMD: 01/06/2007	Topotype: ME-SA
Date received for sequencing: 06/07/2007	Genotype/strain: PanAsia-2
Species: Water buffalo	Sequence filename: PAK07-26.SEQ
Material used: BTy1	Date sequence last updated: 25/07/2007
Region sequenced: VP1	Total no. of comparisons: 1753
RT-PCR primers: O-1C244F/EUR-2B52R; O-1C272F/EUR-2B52R	Min. no. of nt for comparison: 300
No. of Nt determined: 639	Total turn-around time: 380 days
No. of ambiguities: 0	Sequencing time: 345 days
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/2/2007	PAK07-02	639	639	0	100	0
2	O/PAK/40/2007	PAK07-40	639	639	0	100	0
3	O/PAK/42/2007	PAK07-42	639	639	0	100	0
4	O/PAK/43/2007	PAK07-43	639	639	0	100	0
5	O/PAK/45/2007	PAK07-45	639	639	0	100	0
6	O/PAK/46/2007	PAK07-46	639	639	0	100	0
7	O/PAK/24/2007	PAK07-24	639	638	0	99.84	0.16
8	O/PAK/44/2007	PAK07-44	639	638	0	99.84	0.16
9	O/PAK/3/2007	PAK07-03	639	636	0	99.53	0.47
10	O/PAK/53/2007	PAK07-53	639	636	0	99.53	0.47

#### 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	571	0	89.36	10.64
3	O/IND/R2/75* [AF204276]	IND75--A	639	567	0	88.73	11.27
4	O1/Manisa/TUR/69 (AJ251477)	TUR69--E	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	555	0	86.85	13.15
7	O/MOR/1/91	MOR91-01	639	554	0	86.7	13.3
8	O/PHI/5/95 (DQ164946)	PHI95-05	639	518	0	81.06	18.94
9	O/HKN/6/83 (AJ294919)	HKN83-06	637	510	2	80.06	19.94
10	O1/BFS 1860/UK/67 (J02185)	UKG67--A	639	511	0	79.97	20.03

nt, nucleotides

\*, not a WRLFMD reference number

Serotype: O	Report date: 15/06/2008
WRL Ref No: PAK/28/2007	
Sender Ref: 84	
Date collected: 09/02/2007	
Date received by WRLFMD: 01/06/2007	Topotype: ME-SA
Date received for sequencing: 06/07/2007	Genotype/strain: PanAsia-2
Species: Cattle	Sequence filename: PAK07-28.SEQ
Material used: BTy1	Date sequence last updated: 25/07/2007
Region sequenced: VP1	Total no. of comparisons: 1753
RT-PCR primers: O-1C244F/EUR-2B52R; O-1C272F/EUR-2B52R	Min. no. of nt for comparison: 300
No. of Nt determined: 639	Total turn-around time: 380 days
No. of ambiguities: 0	Sequencing time: 345 days
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/50/2007	PAK07-50	639	639	0	100	0
2	O/PAK/22/2007	PAK07-22	639	638	0	99.84	0.16
3	O/PAK/23/2007	PAK07-23	639	638	0	99.84	0.16
4	O/PAK/49/2007	PAK07-49	639	637	0	99.69	0.31
5	O/PAK/61/2006	PAK06-61	639	637	0	99.69	0.31
6	O/PAK/2/2008	PAK08-02	639	636	0	99.53	0.47
7	O/IRN/56/2006	IRN06-56	639	634	0	99.22	0.78
8	O/PAK/10/2006	PAK06-10	639	634	0	99.22	0.78
9	O/PAK/16/2006	PAK06-16	639	634	0	99.22	0.78
10	O/PAK/4/2006	PAK06-04	639	634	0	99.22	0.78

#### 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	569	0	89.05	10.95
3	O/IND/R2/75* [AF204276]	IND75--A	639	567	0	88.73	11.27
4	O1/Manisa/TUR/69 (AJ251477)	TUR69--E	639	565	0	88.42	11.58
5	O/ISR/2/88 (DQ164899)	ISR88-02	639	556	0	87.01	12.99
6	O/TAI/189/87* [TRRL]	TAI87-AC	639	555	0	86.85	13.15
7	O/MOR/1/91	MOR91-01	639	552	0	86.38	13.62
8	O/PHI/5/95 (DQ164946)	PHI95-05	639	521	0	81.53	18.47
9	O/HKN/6/83 (AJ294919)	HKN83-06	637	515	2	80.85	19.15
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: 15/06/2008
WRL Ref No: PAK/31/2007	
Sender Ref: 70	
Date collected: 12/02/2007	
Date received by WRLFMD: 01/06/2007	Topotype: ME-SA
Date received for sequencing: 06/07/2007	Genotype/strain: PanAsia-2
Species: Cattle	Sequence filename: PAK07-31.SEQ
Material used: BTy1	Date sequence last updated: 27/07/2007
Region sequenced: VP1	Total no. of comparisons: 1753
RT-PCR primers: O-1C244F/EUR-2B52R; O-1C272F/EUR-2B52R	Min. no. of nt for comparison: 300
No. of Nt determined: 639	Total turn-around time: 380 days
No. of ambiguities: 0	Sequencing time: 345 days
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/5/2007	PAK07-05	639	637	0	99.69	0.31
2	O/PAK/10/2006	PAK06-10	639	632	0	98.9	1.1
3	O/PAK/16/2006	PAK06-16	639	632	0	98.9	1.1
4	O/PAK/3/2007	PAK07-03	639	632	0	98.9	1.1
5	O/PAK/4/2006	PAK06-04	639	632	0	98.9	1.1
6	O/PAK/53/2007	PAK07-53	639	632	0	98.9	1.1
7	O/PAK/6/2006	PAK06-06	639	632	0	98.9	1.1
8	O/PAK/8/2006	PAK06-08	639	632	0	98.9	1.1
9	O/PAK/9/2006	PAK06-09	639	632	0	98.9	1.1
10	O/IRN/11/2006	IRN06-11	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	601	0	94.05	5.95
2	O/IND/53/79 [AF292107]	IND79A53	639	571	0	89.36	10.64
3	O/IND/R2/75* [AF204276]	IND75--A	639	565	0	88.42	11.58
4	O1/Manisa/TUR/69 (AJ251477)	TUR69--E	639	563	0	88.11	11.89
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	552	0	86.38	13.62
8	O/PHI/5/95 (DQ164946)	PHI95-05	639	523	0	81.85	18.15
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	513	0	80.28	19.72

nt, nucleotides

\*, not a WRLFMD reference number



Serotype: O	Report date: 15/06/2008
WRL Ref No: PAK/32/2007	
Sender Ref: 71	
Date collected: 14/02/2007	
Date received by WRLFMD: 01/06/2007	Topotype: ME-SA
Date received for sequencing: 06/07/2007	Genotype/strain: PanAsia-2
Species: Cattle	Sequence filename: PAK07-32.SEQ
Material used: BTy1	Date sequence last updated: 25/07/2007
Region sequenced: VP1	Total no. of comparisons: 1753
RT-PCR primers: O-1C244F/EUR-2B52R; O-1C272F/EUR-2B52R	Min. no. of nt for comparison: 300
No. of Nt determined: 639	Total turn-around time: 380 days
No. of ambiguities: 0	Sequencing time: 345 days
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/33/2007	PAK07-33	639	639	0	100	0
2	O/PAK/34/2007	PAK07-34	639	637	0	99.69	0.31
3	O/IRN/22/2007	IRN07-22	639	631	0	98.75	1.25
4	O/PAK/15/2007	PAK07-15	639	631	0	98.75	1.25
5	O/PAK/21/2007	PAK07-21	639	631	0	98.75	1.25
6	O/PAK/35/2005	PAK05-35	639	631	0	98.75	1.25
7	O/PAK/56/2007	PAK07-56	639	631	0	98.75	1.25
8	O/PAK/60/2006	PAK06-60	639	631	0	98.75	1.25
9	O/PAK/63/2006	PAK06-63	639	631	0	98.75	1.25
10	O/PAK/73/2006	PAK06-73	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	604	0	94.52	5.48
2	O/IND/53/79 [AF292107]	IND79A53	639	572	0	89.51	10.49
3	O1/Manisa/TUR/69 (AJ251477)	TUR69--E	639	568	0	88.89	11.11
4	O/IND/R2/75* [AF204276]	IND75--A	639	567	0	88.73	11.27
5	O/TAI/189/87* [TRRL]	TAI87-AC	639	564	0	88.26	11.74
6	O/ISR/2/88 (DQ164899)	ISR88-02	639	553	0	86.54	13.46
7	O/MOR/1/91	MOR91-01	639	551	0	86.23	13.77
8	O/PHI/5/95 (DQ164946)	PHI95-05	639	524	0	82	18
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	512	0	80.13	19.87

nt, nucleotides

\*, not a WRLFMD reference number

Serotype: O	Report date: 15/06/2008
WRL Ref No: PAK/33/2007	
Sender Ref: 72	
Date collected: 14/02/2007	
Date received by WRLFMD: 01/06/2007	Topotype: ME-SA
Date received for sequencing: 06/07/2007	Genotype/strain: PanAsia-2
Species: Cattle	Sequence filename: PAK07-33.SEQ
Material used: BTy1	Date sequence last updated: 25/07/2007
Region sequenced: VP1	Total no. of comparisons: 1753
RT-PCR primers: O-1C244F/EUR-2B52R; O-1C272F/EUR-2B52R	Min. no. of nt for comparison: 300
No. of Nt determined: 639	Total turn-around time: 380 days
No. of ambiguities: 0	Sequencing time: 345 days
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/32/2007	PAK07-32	639	639	0	100	0
2	O/PAK/34/2007	PAK07-34	639	637	0	99.69	0.31
3	O/IRN/22/2007	IRN07-22	639	631	0	98.75	1.25
4	O/PAK/15/2007	PAK07-15	639	631	0	98.75	1.25
5	O/PAK/21/2007	PAK07-21	639	631	0	98.75	1.25
6	O/PAK/35/2005	PAK05-35	639	631	0	98.75	1.25
7	O/PAK/56/2007	PAK07-56	639	631	0	98.75	1.25
8	O/PAK/60/2006	PAK06-60	639	631	0	98.75	1.25
9	O/PAK/63/2006	PAK06-63	639	631	0	98.75	1.25
10	O/PAK/73/2006	PAK06-73	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	604	0	94.52	5.48
2	O/IND/53/79 [AF292107]	IND79A53	639	572	0	89.51	10.49
3	O1/Manisa/TUR/69 (AJ251477)	TUR69--E	639	568	0	88.89	11.11
4	O/IND/R2/75* [AF204276]	IND75--A	639	567	0	88.73	11.27
5	O/TAI/189/87* [TRRL]	TAI87-AC	639	564	0	88.26	11.74
6	O/ISR/2/88 (DQ164899)	ISR88-02	639	553	0	86.54	13.46
7	O/MOR/1/91	MOR91-01	639	551	0	86.23	13.77
8	O/PHI/5/95 (DQ164946)	PHI95-05	639	524	0	82	18
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	512	0	80.13	19.87

nt, nucleotides

\*, not a WRLFMD reference number

Serotype: O	Report date: 15/06/2008
WRL Ref No: PAK/34/2007	
Sender Ref: 73	
Date collected: 14/02/2007	
Date received by WRLFMD: 01/06/2007	Topotype: ME-SA
Date received for sequencing: 06/07/2007	Genotype/strain: PanAsia-2
Species: Cattle	Sequence filename: PAK07-34.SEQ
Material used: BTy1	Date sequence last updated: 25/07/2007
Region sequenced: VP1	Total no. of comparisons: 1753
RT-PCR primers: O-1C272F/EUR-2B52R	Min. no. of nt for comparison: 300
No. of Nt determined: 639	Total turn-around time: 380 days
No. of ambiguities: 0	Sequencing time: 345 days
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/32/2007	PAK07-32	639	637	0	99.69	0.31
2	O/PAK/33/2007	PAK07-33	639	637	0	99.69	0.31
3	O/IRN/22/2007	IRN07-22	639	629	0	98.44	1.56
4	O/PAK/15/2007	PAK07-15	639	629	0	98.44	1.56
5	O/PAK/21/2007	PAK07-21	639	629	0	98.44	1.56
6	O/PAK/35/2005	PAK05-35	639	629	0	98.44	1.56
7	O/PAK/56/2007	PAK07-56	639	629	0	98.44	1.56
8	O/PAK/60/2006	PAK06-60	639	629	0	98.44	1.56
9	O/PAK/63/2006	PAK06-63	639	629	0	98.44	1.56
10	O/PAK/73/2006	PAK06-73	639	629	0	98.44	1.56

#### 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	570	0	89.2	10.8
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/TAI/189/87* [TRRL]	TAI87-AC	639	562	0	87.95	12.05
6	O/ISR/2/88 (DQ164899)	ISR88-02	639	551	0	86.23	13.77
7	O/MOR/1/91	MOR91-01	639	549	0	85.92	14.08
8	O/PHI/5/95 (DQ164946)	PHI95-05	639	522	0	81.69	18.31
9	O/HKN/6/83 (AJ294919)	HKN83-06	637	515	2	80.85	19.15
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: 15/06/2008
WRL Ref No: PAK/40/2007	
Sender Ref: 57	
Date collected: 12/03/2007	
Date received by WRLFMD: 01/06/2007	Topotype: ME-SA
Date received for sequencing: 06/07/2007	Genotype/strain: PanAsia-2
Species: Cattle	Sequence filename: PAK07-40.SEQ
Material used: BTy1	Date sequence last updated: 25/07/2007
Region sequenced: VP1	Total no. of comparisons: 1753
RT-PCR primers: O-1C244F/EUR-2B52R; O-1C272F/EUR-2B52R	Min. no. of nt for comparison: 300
No. of Nt determined: 639	Total turn-around time: 380 days
No. of ambiguities: 0	Sequencing time: 345 days
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/2/2007	PAK07-02	639	639	0	100	0
2	O/PAK/26/2007	PAK07-26	639	639	0	100	0
3	O/PAK/42/2007	PAK07-42	639	639	0	100	0
4	O/PAK/43/2007	PAK07-43	639	639	0	100	0
5	O/PAK/45/2007	PAK07-45	639	639	0	100	0
6	O/PAK/46/2007	PAK07-46	639	639	0	100	0
7	O/PAK/24/2007	PAK07-24	639	638	0	99.84	0.16
8	O/PAK/44/2007	PAK07-44	639	638	0	99.84	0.16
9	O/PAK/3/2007	PAK07-03	639	636	0	99.53	0.47
10	O/PAK/53/2007	PAK07-53	639	636	0	99.53	0.47

#### 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	571	0	89.36	10.64
3	O/IND/R2/75* [AF204276]	IND75--A	639	567	0	88.73	11.27
4	O1/Manisa/TUR/69 (AJ251477)	TUR69--E	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	555	0	86.85	13.15
7	O/MOR/1/91	MOR91-01	639	554	0	86.7	13.3
8	O/PHI/5/95 (DQ164946)	PHI95-05	639	518	0	81.06	18.94
9	O/HKN/6/83 (AJ294919)	HKN83-06	637	510	2	80.06	19.94
10	O1/BFS 1860/UK/67 (J02185)	UKG67--A	639	511	0	79.97	20.03

nt, nucleotides

\*, not a WRLFMD reference number

Serotype: O	Report date: 15/06/2008
WRL Ref No: PAK/42/2007	
Sender Ref: 51	
Date collected: 16/03/2007	
Date received by WRLFMD: 01/06/2007	Topotype: ME-SA
Date received for sequencing: 06/07/2007	Genotype/strain: PanAsia-2
Species: Cattle	Sequence filename: PAK07-42.SEQ
Material used: BTy1	Date sequence last updated: 25/07/2007
Region sequenced: VP1	Total no. of comparisons: 1753
RT-PCR primers: O-1C244F/EUR-2B52R; O-1C272F/EUR-2B52R	Min. no. of nt for comparison: 300
No. of Nt determined: 639	Total turn-around time: 380 days
No. of ambiguities: 0	Sequencing time: 345 days
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/2/2007	PAK07-02	639	639	0	100	0
2	O/PAK/26/2007	PAK07-26	639	639	0	100	0
3	O/PAK/40/2007	PAK07-40	639	639	0	100	0
4	O/PAK/43/2007	PAK07-43	639	639	0	100	0
5	O/PAK/45/2007	PAK07-45	639	639	0	100	0
6	O/PAK/46/2007	PAK07-46	639	639	0	100	0
7	O/PAK/24/2007	PAK07-24	639	638	0	99.84	0.16
8	O/PAK/44/2007	PAK07-44	639	638	0	99.84	0.16
9	O/PAK/3/2007	PAK07-03	639	636	0	99.53	0.47
10	O/PAK/53/2007	PAK07-53	639	636	0	99.53	0.47

#### 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	571	0	89.36	10.64
3	O/IND/R2/75* [AF204276]	IND75--A	639	567	0	88.73	11.27
4	O1/Manisa/TUR/69 (AJ251477)	TUR69--E	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	555	0	86.85	13.15
7	O/MOR/1/91	MOR91-01	639	554	0	86.7	13.3
8	O/PHI/5/95 (DQ164946)	PHI95-05	639	518	0	81.06	18.94
9	O/HKN/6/83 (AJ294919)	HKN83-06	637	510	2	80.06	19.94
10	O1/BFS 1860/UK/67 (J02185)	UKG67--A	639	511	0	79.97	20.03

nt, nucleotides

\*, not a WRLFMD reference number

Serotype: O	Report date: 15/06/2008
WRL Ref No: PAK/43/2007	
Sender Ref: 52	
Date collected: 16/03/2007	
Date received by WRLFMD: 01/06/2007	Topotype: ME-SA
Date received for sequencing: 06/07/2007	Genotype/strain: PanAsia-2
Species: Cattle	Sequence filename: PAK07-43.SEQ
Material used: BTy1	Date sequence last updated: 25/07/2007
Region sequenced: VP1	Total no. of comparisons: 1753
RT-PCR primers: O-1C244F/EUR-2B52R; O-1C272F/EUR-2B52R	Min. no. of nt for comparison: 300
No. of Nt determined: 639	Total turn-around time: 380 days
No. of ambiguities: 0	Sequencing time: 345 days
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/2/2007	PAK07-02	639	639	0	100	0
2	O/PAK/26/2007	PAK07-26	639	639	0	100	0
3	O/PAK/40/2007	PAK07-40	639	639	0	100	0
4	O/PAK/42/2007	PAK07-42	639	639	0	100	0
5	O/PAK/45/2007	PAK07-45	639	639	0	100	0
6	O/PAK/46/2007	PAK07-46	639	639	0	100	0
7	O/PAK/24/2007	PAK07-24	639	638	0	99.84	0.16
8	O/PAK/44/2007	PAK07-44	639	638	0	99.84	0.16
9	O/PAK/3/2007	PAK07-03	639	636	0	99.53	0.47
10	O/PAK/53/2007	PAK07-53	639	636	0	99.53	0.47

#### 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	571	0	89.36	10.64
3	O/IND/R2/75* [AF204276]	IND75--A	639	567	0	88.73	11.27
4	O1/Manisa/TUR/69 (AJ251477)	TUR69--E	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	555	0	86.85	13.15
7	O/MOR/1/91	MOR91-01	639	554	0	86.7	13.3
8	O/PHI/5/95 (DQ164946)	PHI95-05	639	518	0	81.06	18.94
9	O/HKN/6/83 (AJ294919)	HKN83-06	637	510	2	80.06	19.94
10	O1/BFS 1860/UK/67 (J02185)	UKG67--A	639	511	0	79.97	20.03

nt, nucleotides

\*, not a WRLFMD reference number

Serotype: O	Report date: 15/06/2008
WRL Ref No: PAK/44/2007	
Sender Ref: 53	
Date collected: 16/03/2007	
Date received by WRLFMD: 01/06/2007	Topotype: ME-SA
Date received for sequencing: 06/07/2007	Genotype/strain: PanAsia-2
Species: Cattle	Sequence filename: PAK07-44.SEQ
Material used: BTy1	Date sequence last updated: 25/07/2007
Region sequenced: VP1	Total no. of comparisons: 1753
RT-PCR primers: O-1C244F/EUR-2B52R; O-1C272F/EUR-2B52R	Min. no. of nt for comparison: 300
No. of Nt determined: 639	Total turn-around time: 380 days
No. of ambiguities: 0	Sequencing time: 345 days
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/2/2007	PAK07-02	639	638	0	99.84	0.16
2	O/PAK/26/2007	PAK07-26	639	638	0	99.84	0.16
3	O/PAK/40/2007	PAK07-40	639	638	0	99.84	0.16
4	O/PAK/42/2007	PAK07-42	639	638	0	99.84	0.16
5	O/PAK/43/2007	PAK07-43	639	638	0	99.84	0.16
6	O/PAK/45/2007	PAK07-45	639	638	0	99.84	0.16
7	O/PAK/46/2007	PAK07-46	639	638	0	99.84	0.16
8	O/PAK/24/2007	PAK07-24	639	637	0	99.69	0.31
9	O/PAK/3/2007	PAK07-03	639	635	0	99.37	0.63
10	O/PAK/53/2007	PAK07-53	639	635	0	99.37	0.63

#### 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	570	0	89.2	10.8
3	O/IND/R2/75* [AF204276]	IND75--A	639	567	0	88.73	11.27
4	O1/Manisa/TUR/69 (AJ251477)	TUR69--E	639	563	0	88.11	11.89
5	O/ISR/2/88 (DQ164899)	ISR88-02	639	557	0	87.17	12.83
6	O/TAI/189/87* [TRRL]	TAI87-AC	639	554	0	86.7	13.3
7	O/MOR/1/91	MOR91-01	639	553	0	86.54	13.46
8	O/PHI/5/95 (DQ164946)	PHI95-05	639	517	0	80.91	19.09
9	O1/BFS 1860/UK/67 (J02185)	UKG67--A	639	511	0	79.97	20.03
10	O/HKN/6/83 (AJ294919)	HKN83-06	637	509	2	79.91	20.09

nt, nucleotides

\*, not a WRLFMD reference number

Serotype: O	Report date: 15/06/2008
WRL Ref No: PAK/45/2007	
Sender Ref: 54	
Date collected: 16/03/2007	
Date received by WRLFMD: 01/06/2007	Topotype: ME-SA
Date received for sequencing: 06/07/2007	Genotype/strain: PanAsia-2
Species: Cattle	Sequence filename: PAK07-45.SEQ
Material used: BTy1	Date sequence last updated: 25/07/2007
Region sequenced: VP1	Total no. of comparisons: 1753
RT-PCR primers: O-1C244F/EUR-2B52R; O-1C272F/EUR-2B52R	Min. no. of nt for comparison: 300
No. of Nt determined: 639	Total turn-around time: 380 days
No. of ambiguities: 0	Sequencing time: 345 days
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/2/2007	PAK07-02	639	639	0	100	0
2	O/PAK/26/2007	PAK07-26	639	639	0	100	0
3	O/PAK/40/2007	PAK07-40	639	639	0	100	0
4	O/PAK/42/2007	PAK07-42	639	639	0	100	0
5	O/PAK/43/2007	PAK07-43	639	639	0	100	0
6	O/PAK/46/2007	PAK07-46	639	639	0	100	0
7	O/PAK/24/2007	PAK07-24	639	638	0	99.84	0.16
8	O/PAK/44/2007	PAK07-44	639	638	0	99.84	0.16
9	O/PAK/3/2007	PAK07-03	639	636	0	99.53	0.47
10	O/PAK/53/2007	PAK07-53	639	636	0	99.53	0.47

#### 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	571	0	89.36	10.64
3	O/IND/R2/75* [AF204276]	IND75--A	639	567	0	88.73	11.27
4	O1/Manisa/TUR/69 (AJ251477)	TUR69--E	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	555	0	86.85	13.15
7	O/MOR/1/91	MOR91-01	639	554	0	86.7	13.3
8	O/PHI/5/95 (DQ164946)	PHI95-05	639	518	0	81.06	18.94
9	O/HKN/6/83 (AJ294919)	HKN83-06	637	510	2	80.06	19.94
10	O1/BFS 1860/UK/67 (J02185)	UKG67--A	639	511	0	79.97	20.03

nt, nucleotides

\*, not a WRLFMD reference number



Serotype: O	Report date: 15/06/2008
WRL Ref No: PAK/46/2007	
Sender Ref: 55	
Date collected: 16/03/2007	
Date received by WRLFMD: 01/06/2007	Topotype: ME-SA
Date received for sequencing: 06/07/2007	Genotype/strain: PanAsia-2
Species: Cattle	Sequence filename: PAK07-46.SEQ
Material used: BTy1	Date sequence last updated: 25/07/2007
Region sequenced: VP1	Total no. of comparisons: 1753
RT-PCR primers: O-1C244F/EUR-2B52R; O-1C272F/EUR-2B52R	Min. no. of nt for comparison: 300
No. of Nt determined: 639	Total turn-around time: 380 days
No. of ambiguities: 0	Sequencing time: 345 days
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/2/2007	PAK07-02	639	639	0	100	0
2	O/PAK/26/2007	PAK07-26	639	639	0	100	0
3	O/PAK/40/2007	PAK07-40	639	639	0	100	0
4	O/PAK/42/2007	PAK07-42	639	639	0	100	0
5	O/PAK/43/2007	PAK07-43	639	639	0	100	0
6	O/PAK/45/2007	PAK07-45	639	639	0	100	0
7	O/PAK/24/2007	PAK07-24	639	638	0	99.84	0.16
8	O/PAK/44/2007	PAK07-44	639	638	0	99.84	0.16
9	O/PAK/3/2007	PAK07-03	639	636	0	99.53	0.47
10	O/PAK/53/2007	PAK07-53	639	636	0	99.53	0.47

#### 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	571	0	89.36	10.64
3	O/IND/R2/75* [AF204276]	IND75--A	639	567	0	88.73	11.27
4	O1/Manisa/TUR/69 (AJ251477)	TUR69--E	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	555	0	86.85	13.15
7	O/MOR/1/91	MOR91-01	639	554	0	86.7	13.3
8	O/PHI/5/95 (DQ164946)	PHI95-05	639	518	0	81.06	18.94
9	O/HKN/6/83 (AJ294919)	HKN83-06	637	510	2	80.06	19.94
10	O1/BFS 1860/UK/67 (J02185)	UKG67--A	639	511	0	79.97	20.03

nt, nucleotides

\*, not a WRLFMD reference number

Serotype: O	Report date: 15/06/2008
WRL Ref No: PAK/48/2007	
Sender Ref: 103	
Date collected: 26/03/2007	Topotype: ME-SA
Date received by WRLFMD: 01/06/2007	Genotype/strain: PanAsia-2
Date received for sequencing: 12/07/2007	Sequence filename: PAK07-48.SEQ
Species: Cattle	Date sequence last updated: 25/07/2007
Material used: BTy1	Total no. of comparisons: 1753
Region sequenced: VP1	Min. no. of nt for comparison: 300
RT-PCR primers: O-1C244F/EUR-2B52R; O-1C272F/EUR-2B52R	Total turn-around time: 380 days
No. of Nt determined: 639	Sequencing time: 339 days
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/IRN/56/2006	IRN06-56	639	622	0	97.34	2.66
2	O/PAK/13/2005	PAK05-13	639	622	0	97.34	2.66
3	O/NEP/2/2003	NEP03-02	638	620	1	97.18	2.82
4	O/IRN/12/2006	IRN06-12	639	620	0	97.03	2.97
5	O/IRN/14/2006	IRN06-14	639	620	0	97.03	2.97
6	O/IRN/42/2006	IRN06-42	639	620	0	97.03	2.97
7	O/NEP/6/2003 (DQ165061)	NEP03-06	639	620	0	97.03	2.97
8	O/PAK/10/2006	PAK06-10	639	620	0	97.03	2.97
9	O/PAK/16/2006	PAK06-16	639	620	0	97.03	2.97
10	O/PAK/4/2006	PAK06-04	639	620	0	97.03	2.97

#### 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	606	0	94.84	5.16
2	O/IND/R2/75* [AF204276]	IND75--A	639	571	0	89.36	10.64
3	O/IND/53/79 [AF292107]	IND79A53	639	569	0	89.05	10.95
4	O1/Manisa/TUR/69 (AJ251477)	TUR69--E	639	569	0	89.05	10.95
5	O/TAI/189/87* [TRRL]	TAI87-AC	639	561	0	87.79	12.21
6	O/ISR/2/88 (DQ164899)	ISR88-02	639	559	0	87.48	12.52
7	O/MOR/1/91	MOR91-01	639	555	0	86.85	13.15
8	O/PHI/5/95 (DQ164946)	PHI95-05	639	523	0	81.85	18.15
9	O/HKN/6/83 (AJ294919)	HKN83-06	637	518	2	81.32	18.68
10	O1/BFS 1860/UK/67 (J02185)	UKG67--A	639	515	0	80.59	19.41

nt, nucleotides

\*, not a WRLFMD reference number

Serotype: O	Report date: 15/06/2008
WRL Ref No: PAK/49/2007	
Sender Ref: 100	
Date collected: 14/05/2007	
Date received by WRLFMD: 01/06/2007	Topotype: ME-SA
Date received for sequencing: 06/07/2007	Genotype/strain: PanAsia-2
Species: Cattle	Sequence filename: PAK07-49.SEQ
Material used: BTy1	Date sequence last updated: 25/07/2007
Region sequenced: VP1	Total no. of comparisons: 1753
RT-PCR primers: O-1C244F/EUR-2B52R; O-1C272F/EUR-2B52R	Min. no. of nt for comparison: 300
No. of Nt determined: 639	Total turn-around time: 380 days
No. of ambiguities: 0	Sequencing time: 345 days
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	637	0	99.69	0.31
2	O/PAK/50/2007	PAK07-50	639	637	0	99.69	0.31
3	O/PAK/22/2007	PAK07-22	639	636	0	99.53	0.47
4	O/PAK/23/2007	PAK07-23	639	636	0	99.53	0.47
5	O/PAK/61/2006	PAK06-61	639	635	0	99.37	0.63
6	O/PAK/2/2008	PAK08-02	639	634	0	99.22	0.78
7	O/IRN/56/2006	IRN06-56	639	632	0	98.9	1.1
8	O/PAK/10/2006	PAK06-10	639	632	0	98.9	1.1
9	O/PAK/16/2006	PAK06-16	639	632	0	98.9	1.1
10	O/PAK/4/2006	PAK06-04	639	632	0	98.9	1.1

#### 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	567	0	88.73	11.27
3	O/IND/R2/75* [AF204276]	IND75--A	639	567	0	88.73	11.27
4	O1/Manisa/TUR/69 (AJ251477)	TUR69--E	639	565	0	88.42	11.58
5	O/ISR/2/88 (DQ164899)	ISR88-02	639	558	0	87.32	12.68
6	O/MOR/1/91	MOR91-01	639	554	0	86.7	13.3
7	O/TAI/189/87* [TRRL]	TAI87-AC	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	513	2	80.53	19.47
10	O1/BFS 1860/UK/67 (J02185)	UKG67--A	639	514	0	80.44	19.56

nt, nucleotides

\*, not a WRLFMD reference number

Serotype: O	Report date: 15/06/2008
WRL Ref No: PAK/50/2007	
Sender Ref: 99	
Date collected: 25/05/2007	
Date received by WRLFMD: 01/06/2007	Topotype: ME-SA
Date received for sequencing: 06/07/2007	Genotype/strain: PanAsia-2
Species: Cattle	Sequence filename: PAK07-50.SEQ
Material used: BTy1	Date sequence last updated: 25/07/2007
Region sequenced: VP1	Total no. of comparisons: 1753
RT-PCR primers: O-1C244F/EUR-2B52R; O-1C272F/EUR-2B52R	Min. no. of nt for comparison: 300
No. of Nt determined: 639	Total turn-around time: 380 days
No. of ambiguities: 0	Sequencing time: 345 days
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	639	0	100	0
2	O/PAK/22/2007	PAK07-22	639	638	0	99.84	0.16
3	O/PAK/23/2007	PAK07-23	639	638	0	99.84	0.16
4	O/PAK/49/2007	PAK07-49	639	637	0	99.69	0.31
5	O/PAK/61/2006	PAK06-61	639	637	0	99.69	0.31
6	O/PAK/2/2008	PAK08-02	639	636	0	99.53	0.47
7	O/IRN/56/2006	IRN06-56	639	634	0	99.22	0.78
8	O/PAK/10/2006	PAK06-10	639	634	0	99.22	0.78
9	O/PAK/16/2006	PAK06-16	639	634	0	99.22	0.78
10	O/PAK/4/2006	PAK06-04	639	634	0	99.22	0.78

#### 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	569	0	89.05	10.95
3	O/IND/R2/75* [AF204276]	IND75--A	639	567	0	88.73	11.27
4	O1/Manisa/TUR/69 (AJ251477)	TUR69--E	639	565	0	88.42	11.58
5	O/ISR/2/88 (DQ164899)	ISR88-02	639	556	0	87.01	12.99
6	O/TAI/189/87* [TRRL]	TAI87-AC	639	555	0	86.85	13.15
7	O/MOR/1/91	MOR91-01	639	552	0	86.38	13.62
8	O/PHI/5/95 (DQ164946)	PHI95-05	639	521	0	81.53	18.47
9	O/HKN/6/83 (AJ294919)	HKN83-06	637	515	2	80.85	19.15
10	O1/BFS 1860/UK/67 (J02185)	UKG67--A	639	512	0	80.13	19.87

nt, nucleotides

\*, not a WRLFMD reference number

# Comparison of FMD type O viruses isolated from Pakistan between 2007

Batch: WRLFMD-2007-00019

Received: 01/06/2007

(all viruses belong to the ME-SA toptotype)

Software: MEGA 4.0  
 No. of Taxa : 120  
 Data File : n:\levd\meg\db\fm\o\PAKusman3.meg  
 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

N.J. Knowles, J. Wadsworth, K. Ebert & U. Waheed  
 9 June 2008

