

**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: Asia 1	Report date: 05/02/2004
Virus isolate: PAK/30/2002	
Material used: BTy1	
Region sequenced: VP1	Topotype: none designated
RT-PCR primers: As1-1C616/NK61	Genotype/strain: none designated
No. of nt determined: 633	Seq. filename: PAK02-30
No. nt in gene: 633	Date sequence last updated: 29/09/2003
No. of ambiguities: 0	Total no. of comparisons made: 211

Comments:

Ten Most Closely Related Viruses

Pos.	Virus name	Filename	No. nt compared	No. nt matched	No. of ambiguities	% Identity	% Difference
1	As1/PAK/32/2002	PAK02-32	603	601	0	99.67	0.33
2	As1/PAK/34/2002	PAK02-34	633	629	0	99.37	0.63
3	As1/PAK/33/2002	PAK02-33	633	629	0	99.37	0.63
4	As1/PAK/31/2002	PAK02-31	633	629	0	99.37	0.63
5	As1/PAK/35/2002	PAK02-35	581	576	4	99.14	0.86
6	As1/PAK/69/2003	PAK03-69	633	613	0	96.84	3.16
7	As1/SAU/40/94	SAU94-40	165	159	0	96.36	3.64
8	As1/SAU/39/94	SAU94-39	165	158	0	95.76	4.24
9	As1/IND/40/95*	IND95-40	165	158	0	95.76	4.24
10	As1/IND/43/95*	IND95-43	165	158	0	95.76	4.24

Relationships to Reference Virus Strains

Pos.	Virus name	Filename	No. nt compared	No. nt matched	No. of ambiguities	% Identity	% Difference
1	As1/IND/8/79	IND79-08	166	154	2	92.77	7.23
2	As1/WBN/117/85*	IND85117	165	152	0	92.12	7.88
3	As1/Shamir/ISR/89	ISR89--A	633	568	0	89.73	10.27
4	As1/TAI/1/85	TAI85-01	147	126	0	85.71	14.29
5	As1/IND/63/72*	IND72B63	630	533	0	84.60	15.40
6	As1/CAM/9/80	CAM80-09	583	485	5	83.19	16.81
7	As1/PAK/1/54	PAK54-01	630	509	0	80.79	19.21

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: Asia 1		Report date: 05/02/2004					
Virus isolate: PAK/31/2002							
Material used: BTy1							
Region sequenced: VP1		Topotype: none designated					
RT-PCR primers: As1-1C616/NK61		Genotype/strain: none designated					
No. of nt determined: 633		Seq. filename: PAK02-31					
No. nt in gene: 633		Date sequence last updated: 29/09/2003					
No. of ambiguities: 0		Total no. of comparisons made: 211					
Comments:							
Ten Most Closely Related Viruses							
Pos.	Virus name	Filename	No. nt compared	No. nt matched	No. of ambiguities	% Identity	% Difference
1	As1/PAK/33/2002	PAK02-33	633	633	0	100.00	0.00
2	As1/PAK/34/2002	PAK02-34	633	633	0	100.00	0.00
3	As1/PAK/32/2002	PAK02-32	603	603	0	100.00	0.00
4	As1/PAK/30/2002	PAK02-30	633	629	0	99.37	0.63
5	As1/PAK/35/2002	PAK02-35	581	575	4	98.97	1.03
6	As1/PAK/69/2003	PAK03-69	633	615	0	97.16	2.84
7	As1/SAU/40/94	SAU94-40	165	159	0	96.36	3.64
8	As1/PAK/20/2003	PAK03-20	631	605	2	95.88	4.12
9	As1/SAU/39/94	SAU94-39	165	158	0	95.76	4.24
10	As1/IND/43/95*	IND95-43	165	158	0	95.76	4.24
Relationships to Reference Virus Strains							
Pos.	Virus name	Filename	No. nt compared	No. nt matched	No. of ambiguities	% Identity	% Difference
1	As1/IND/8/79	IND79-08	166	154	2	92.77	7.23
2	As1/WBN/117/85*	IND85117	165	152	0	92.12	7.88
3	As1/Shamir/ISR/89	ISR89--A	633	566	0	89.42	10.58
4	As1/TAI/1/85	TAI85-01	147	126	0	85.71	14.29
5	As1/IND/63/72*	IND72B63	630	531	0	84.29	15.71
6	As1/CAM/9/80	CAM80-09	583	484	5	83.02	16.98
7	As1/PAK/1/54	PAK54-01	630	507	0	80.48	19.52
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: Asia 1	Report date: 05/02/2004
Virus isolate: PAK/33/2002	
Material used: BTy1	
Region sequenced: VP1	Topotype: none designated
RT-PCR primers: As1-1C616/NK61	Genotype/strain: none designated
No. of nt determined: 633	Seq. filename: PAK02-33
No. nt in gene: 633	Date sequence last updated: 29/09/2003
No. of ambiguities: 0	Total no. of comparisons made: 211

Comments:

Ten Most Closely Related Viruses

Pos.	Virus name	Filename	No. nt compared	No. nt matched	No. of ambiguities	% Identity	% Difference
1	As1/PAK/34/2002	PAK02-34	633	633	0	100.00	0.00
2	As1/PAK/32/2002	PAK02-32	603	603	0	100.00	0.00
3	As1/PAK/31/2002	PAK02-31	633	633	0	100.00	0.00
4	As1/PAK/30/2002	PAK02-30	633	629	0	99.37	0.63
5	As1/PAK/35/2002	PAK02-35	581	575	4	98.97	1.03
6	As1/PAK/69/2003	PAK03-69	633	615	0	97.16	2.84
7	As1/SAU/40/94	SAU94-40	165	159	0	96.36	3.64
8	As1/PAK/20/2003	PAK03-20	631	605	2	95.88	4.12
9	As1/SAU/39/94	SAU94-39	165	158	0	95.76	4.24
10	As1/IND/43/95*	IND95-43	165	158	0	95.76	4.24

Relationships to Reference Virus Strains

Pos.	Virus name	Filename	No. nt compared	No. nt matched	No. of ambiguities	% Identity	% Difference
1	As1/IND/8/79	IND79-08	166	154	2	92.77	7.23
2	As1/WBN/117/85*	IND85117	165	152	0	92.12	7.88
3	As1/Shamir/ISR/89	ISR89--A	633	566	0	89.42	10.58
4	As1/TAI/1/85	TAI85-01	147	126	0	85.71	14.29
5	As1/IND/63/72*	IND72B63	630	531	0	84.29	15.71
6	As1/CAM/9/80	CAM80-09	583	484	5	83.02	16.98
7	As1/PAK/1/54	PAK54-01	630	507	0	80.48	19.52

nt, nucleotides

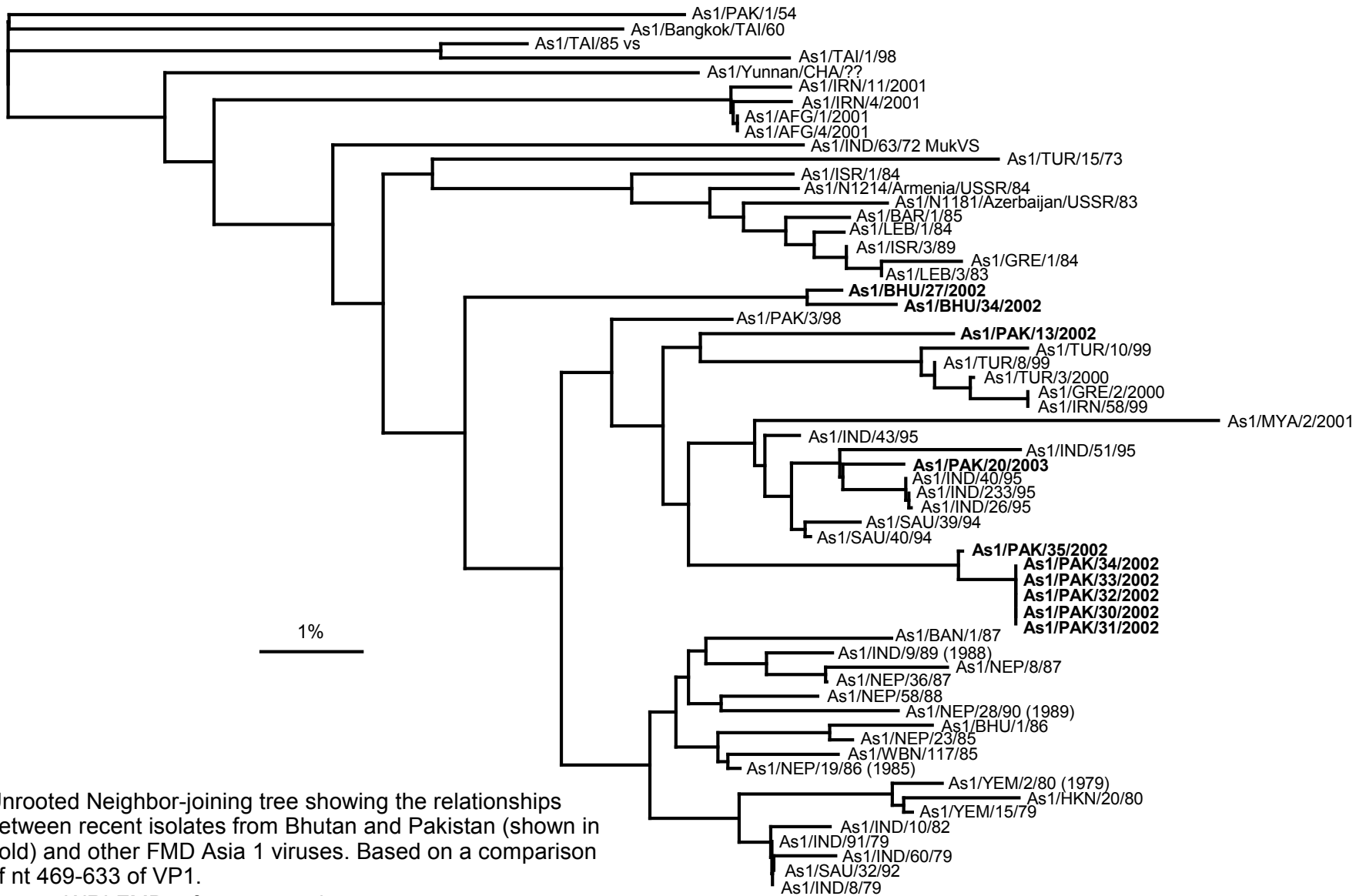
*, not a WRLFMD reference number

**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: Asia 1		Report date: 05/02/2004					
Virus isolate: PAK/34/2002							
Material used: BTy1							
Region sequenced: VP1		Topotype: none designated					
RT-PCR primers: As1-1C616/NK61		Genotype/strain: none designated					
No. of nt determined: 633		Seq. filename: PAK02-34					
No. nt in gene: 633		Date sequence last updated: 29/09/2003					
No. of ambiguities: 0		Total no. of comparisons made: 211					
Comments:							
Ten Most Closely Related Viruses							
Pos.	Virus name	Filename	No. nt compared	No. nt matched	No. of ambiguities	% Identity	% Difference
1	As1/PAK/33/2002	PAK02-33	633	633	0	100.00	0.00
2	As1/PAK/32/2002	PAK02-32	603	603	0	100.00	0.00
3	As1/PAK/31/2002	PAK02-31	633	633	0	100.00	0.00
4	As1/PAK/30/2002	PAK02-30	633	629	0	99.37	0.63
5	As1/PAK/35/2002	PAK02-35	581	575	4	98.97	1.03
6	As1/PAK/69/2003	PAK03-69	633	615	0	97.16	2.84
7	As1/SAU/40/94	SAU94-40	165	159	0	96.36	3.64
8	As1/PAK/20/2003	PAK03-20	631	605	2	95.88	4.12
9	As1/SAU/39/94	SAU94-39	165	158	0	95.76	4.24
10	As1/IND/43/95*	IND95-43	165	158	0	95.76	4.24
Relationships to Reference Virus Strains							
Pos.	Virus name	Filename	No. nt compared	No. nt matched	No. of ambiguities	% Identity	% Difference
1	As1/IND/8/79	IND79-08	166	154	2	92.77	7.23
2	As1/WBN/117/85*	IND85117	165	152	0	92.12	7.88
3	As1/Shamir/ISR/89	ISR89--A	633	566	0	89.42	10.58
4	As1/TAI/1/85	TAI85-01	147	126	0	85.71	14.29
5	As1/IND/63/72*	IND72B63	630	531	0	84.29	15.71
6	As1/CAM/9/80	CAM80-09	583	484	5	83.02	16.98
7	As1/PAK/1/54	PAK54-01	630	507	0	80.48	19.52
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: Asia 1		Report date: 05/02/2004					
Virus isolate: PAK/20/2003							
Material used: BTy1							
Region sequenced: VP1		Topotype: none designated					
RT-PCR primers: As1-1C616/NK61		Genotype/strain: none designated					
No. of nt determined: 631		Seq. filename: PAK03-20					
No. nt in gene: 633		Date seq. last updated: 29/09/2003					
No. of ambiguities: 2		Total no. of comparisons made: 211					
Comments:							
Ten Most Closely Related Viruses							
Pos.	Virus name	Filename	No. nt compared	No. nt matched	No. of ambiguities	% Identity	% Difference
1	As1/PAK/3/98	PAK98-03	605	598	8	98.84	1.16
2	As1/IND/43/95*	IND95-43	165	163	0	98.79	1.21
3	As1/SAU/40/94	SAU94-40	165	163	0	98.79	1.21
4	As1/IND/40/95*	IND95-40	165	163	0	98.79	1.21
5	As1/IND/233/95*	IND95233	163	161	2	98.77	1.23
6	As1/IND/26/95*	IND95-26	162	160	3	98.77	1.23
7	As1/SAU/39/94	SAU94-39	165	162	0	98.18	1.82
8	As1/IRN/58/99	IRN99-58	631	619	2	98.10	1.90
9	As1/GRE/2/2000	GRE00-02	631	617	2	97.78	2.22
10	As1/BAN/4/96	BAN96-04	631	616	2	97.62	2.38
Relationships to Reference Virus Strains							
Pos.	Virus name	Filename	No. nt compared	No. nt matched	No. of ambiguities	% Identity	% Difference
1	As1/IND/8/79	IND79-08	166	155	2	93.37	6.63
2	As1/WBN/117/85*	IND85117	165	154	0	93.33	6.67
3	As1/Shamir/ISR/89	ISR89--A	631	564	2	89.38	10.62
4	As1/TAI/1/85	TAI85-01	147	127	0	86.39	13.61
5	As1/IND/63/72*	IND72B63	628	531	2	84.55	15.45
6	As1/CAM/9/80	CAM80-09	583	489	5	83.88	16.12
7	As1/PAK/1/54	PAK54-01	628	508	2	80.89	19.11
nt, nucleotides							
*, not a WRLFMD reference number							



Unrooted Neighbor-joining tree showing the relationships between recent isolates from Bhutan and Pakistan (shown in bold) and other FMD Asia 1 viruses. Based on a comparison of nt 469-633 of VP1.

*, not a WRLFMD reference number.