

**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: <b>A</b>		Report date: 16/02/2004					
Virus isolate: <b>BHU/6/2003</b>							
Material used: 10% epith susp							
Region sequenced: VP1		Topotype: Asia					
RT-PCR primers: A-1C612F/NK61		Genotype/strain: not designated					
No. of nt determined: 550		Seq. filename: BHU03-06					
No. nt in gene: 639		Date sequence last updated: 27/01/2004					
No. of ambiguities: 2		Total no. of comparisons made: 647					
Comments:							
<b>Ten Most Closely Related Viruses</b>							
Pos.	Virus name	Filename	No. nt compared	No. nt matched	No. of ambiguities	% Identity	% Difference
1	A/BHU/7/2003	BHU03-07	550	550	2	100.00	0.00
2	A/BHU/41/2002	BHU02-41	550	549	2	99.82	0.18
3	A/BHU/8/2003	BHU03-08	535	533	2	99.63	0.37
4	A/BHU/27/2003	BHU03-27	550	544	2	98.91	1.09
5	A/BHU/40/2003	BHU03-40	531	522	4	98.31	1.69
6	A/MCD/6/96	MCD96-06	164	158	1	96.34	3.66
7	A/MCD/5/96	MCD96-05	162	156	3	96.30	3.70
8	A/SAU/24/95	SAU95-24	158	152	0	96.20	3.80
9	A/SAU/35/94	SAU94-35	164	157	1	95.73	4.27
10	A/IND/287/96*	IND96287	547	522	2	95.43	4.57
<b>Relationships to Reference Virus Strains</b>							
Pos.	Virus name	Filename	No. nt compared	No. nt matched	No. of ambiguities	% Identity	% Difference
1	A/SAU/23/86	SAU86-23	302	263	13	87.09	12.91
2	A/SAU/41/91	SAU91-41	132	114	4	86.36	13.64
3	A/IND/7/82 (1980)	IND82-07	253	215	16	84.98	15.02
4	A22/IRQ/24/64	IRQ64-24	550	466	2	84.73	15.27
5	A/IRN/22/99	IRN99-22	528	438	16	82.95	17.05
6	A/IRN/1/96	IRN96-01	355	293	11	82.54	17.46
7	A/IRN/87	IRN87--M	546	447	3	81.87	18.13
8	A/TAI/2/97	TAI97-02	521	415	7	79.65	20.35
9	A24/Cruzeiro/BRA/55	BRA55--C	550	432	2	78.55	21.45
nt, nucleotides							
*, not a WRLFMD reference number							

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the Head of the World Reference Laboratory for FMD (Non-QAU Form)**

Serotype: <b>A</b>		Report date: <b>16/02/2004</b>					
Virus isolate: <b>BHU/7/2003</b>							
Material used: 10% epith susp							
Region sequenced: VP1		Topotype: Asia					
RT-PCR primers: A-1C612F/NK61		Genotype/strain: not designated					
No. of nt determined: 639		Seq. filename: BHU03-07					
No. nt in gene: 639		Date sequence last updated: 27/01/2004					
No. of ambiguities: 0		Total no. of comparisons made: 647					
Comments:							
<b>Ten Most Closely Related Viruses</b>							
Pos.	Virus name	Filename	No. nt compared	No. nt matched	No. of ambiguities	% Identity	% Difference
1	A/BHU/6/2003	BHU03-06	550	550	2	100.00	0.00
2	A/BHU/41/2002	BHU02-41	639	637	0	99.69	0.31
3	A/BHU/8/2003	BHU03-08	591	588	0	99.49	0.51
4	A/BHU/27/2003	BHU03-27	639	631	0	98.75	1.25
5	A/BHU/40/2003	BHU03-40	620	608	2	98.06	1.94
6	A/MCD/6/96	MCD96-06	164	158	1	96.34	3.66
7	A/MCD/5/96	MCD96-05	162	156	3	96.30	3.70
8	A/SAU/24/95	SAU95-24	158	152	0	96.20	3.80
9	A/SAU/35/94	SAU94-35	164	157	1	95.73	4.27
10	A/IND/148/93	IND93148	636	605	0	95.13	4.87
<b>Relationships to Reference Virus Strains</b>							
Pos.	Virus name	Filename	No. nt compared	No. nt matched	No. of ambiguities	% Identity	% Difference
1	A/SAU/23/86	SAU86-23	302	263	13	87.09	12.91
2	A/SAU/41/91	SAU91-41	132	114	4	86.36	13.64
3	A/IND/7/82 (1980)	IND82-07	253	215	16	84.98	15.02
4	A22/IRQ/24/64	IRQ64-24	639	542	0	84.82	15.18
5	A/IRN/22/99	IRN99-22	611	508	20	83.14	16.86
6	A/IRN/1/96	IRN96-01	355	293	11	82.54	17.46
7	A/IRN/87	IRN87--M	634	522	2	82.33	17.67
8	A/TAI/2/97	TAI97-02	610	489	5	80.16	19.84
9	A24/Cruzeiro/BRA/55	BRA55--C	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: <b>A</b>		Report date: 16/02/2004					
Virus isolate: <b>BHU/8/2003</b>							
Material used: 10% epith susp							
Region sequenced: VP1		Topotype: Asia					
RT-PCR primers: A-1C612F/NK61		Genotype/strain: not designated					
No. of nt determined: 591		Seq. filename: BHU03-08					
No. nt in gene: 639		Date sequence last updated: 27/01/2004					
No. of ambiguities: 0		Total no. of comparisons made: 647					
Comments:							
<b>Ten Most Closely Related Viruses</b>							
Pos.	Virus name	Filename	No. nt compared	No. nt matched	No. of ambiguities	% Identity	% Difference
1	A/BHU/41/2002	BHU02-41	591	589	0	99.66	0.34
2	A/BHU/6/2003	BHU03-06	535	533	2	99.63	0.37
3	A/BHU/7/2003	BHU03-07	591	588	0	99.49	0.51
4	A/BHU/27/2003	BHU03-27	591	581	0	98.31	1.69
5	A/BHU/40/2003	BHU03-40	587	576	2	98.13	1.87
6	A/SAU/24/95	SAU95-24	158	152	0	96.20	3.80
7	A/SAU/35/94	SAU94-35	153	146	0	95.42	4.58
8	A/MCD/6/96	MCD96-06	152	145	1	95.39	4.61
9	A/MCD/5/96	MCD96-05	151	144	2	95.36	4.64
10	A/IND/148/93*	IND93148	588	559	0	95.07	4.93
<b>Relationships to Reference Virus Strains</b>							
Pos.	Virus name	Filename	No. nt compared	No. nt matched	No. of ambiguities	% Identity	% Difference
1	A/SAU/23/86	SAU86-23	288	249	12	86.46	13.54
2	A/SAU/41/91	SAU91-41	118	102	3	86.44	13.56
3	A22/IRQ/24/64	IRQ64-24	591	505	0	85.45	14.55
4	A/IND/7/82 (1980)	IND82-07	238	203	16	85.29	14.71
5	A/IRN/22/99	IRN99-22	571	475	17	83.19	16.81
6	A/IRN/1/96	IRN96-01	355	294	11	82.82	17.18
7	A/IRN/87	IRN87--M	588	485	0	82.48	17.52
8	A/TAI/2/97	TAI97-02	577	464	5	80.42	19.58
9	A24/Cruzeiro/BRA/55	BRA55--C	591	468	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: <b>A</b>	Report date: 16/02/2004
Virus isolate: <b>BHU/27/2003</b>	
Material used: BTy1	
Region sequenced: VP1	Topotype: Asia
RT-PCR primers: A-1C562F/NK61 & A-1C612F/NK61	Genotype/strain: not designated
No. of nt determined: 639	Seq. filename: BHU03-27
No. nt in gene: 639	Date sequence last updated: 12/02/2004
No. of ambiguities: 0	Total no. of comparisons made: 647

Comments:

**Ten Most Closely Related Viruses**

Pos.	Virus name	Filename	No. nt compared	No. nt matched	No. of ambiguities	% Identity	% Difference
1	A/BHU/6/2003	BHU03-06	550	544	2	98.91	1.09
2	A/BHU/41/2002	BHU02-41	639	631	0	98.75	1.25
3	A/BHU/7/2003	BHU03-07	639	631	0	98.75	1.25
4	A/BHU/8/2003	BHU03-08	591	581	0	98.31	1.69
5	A/BHU/40/2003	BHU03-40	620	608	2	98.06	1.94
6	A/MCD/6/96	MCD96-06	164	157	1	95.73	4.27
7	A/MCD/5/96	MCD96-05	162	155	3	95.68	4.32
8	A/SAU/24/95	SAU95-24	158	151	0	95.57	4.43
9	A/ALB/4/96	ALB96-04	441	420	3	95.24	4.76
10	A/IND/287/96*	IND96287	636	605	0	95.13	4.87

**Relationships to Reference Virus Strains**

Pos.	Virus name	Filename	No. nt compared	No. nt matched	No. of ambiguities	% Identity	% Difference
1	A/SAU/23/86	SAU86-23	302	264	13	87.42	12.58
2	A/SAU/41/91	SAU91-41	132	114	4	86.36	13.64
3	A22/IRQ/24/64	IRQ64-24	639	542	0	84.82	15.18
4	A/IND/7/82 (1980)	IND82-07	253	214	16	84.58	15.42
5	A/IRN/22/99	IRN99-22	611	510	20	83.47	16.53
6	A/IRN/1/96	IRN96-01	355	294	11	82.82	17.18
7	A/IRN/87	IRN87--M	634	522	2	82.33	17.67
8	A/TAI/2/97	TAI97-02	610	490	5	80.33	19.67
9	A24/Cruzeiro/BRA/55	BRA55--C	639	508	0	79.50	20.50

nt, nucleotides

\*, not a WRLFMD reference number

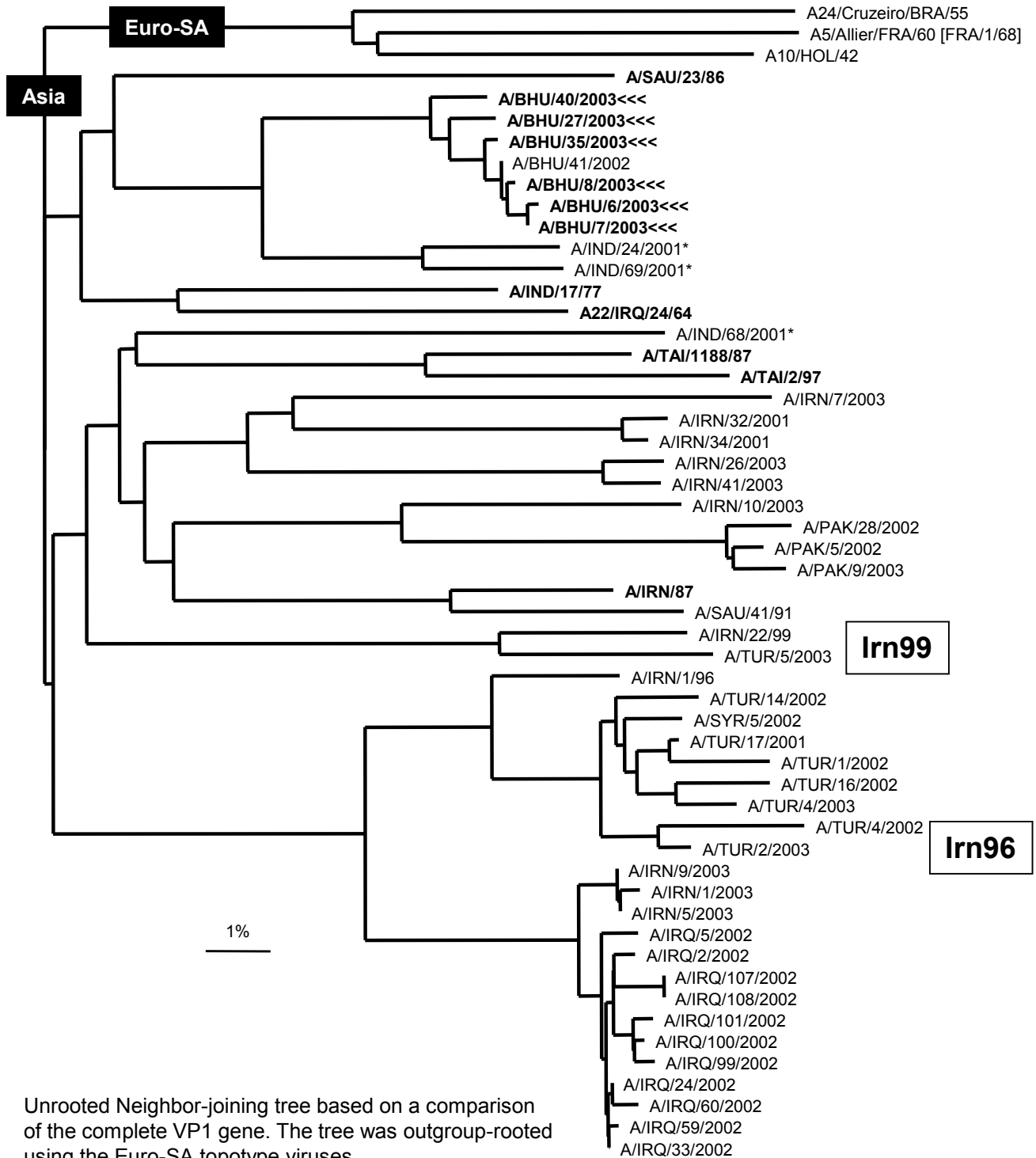
**Report from the Molecular Epidemiology Section of the Dept. of Exotic Disease Control to  
the Head of the World Reference Laboratory for FMD (Non-QAU Form)**

Serotype: <b>A</b>		Report date: <b>24/02/2004</b>					
Virus isolate: <b>BHU/35/2003</b>							
Material used: <b>BTy1</b>							
Region sequenced: <b>VP1</b>		Topotype: <b>Asia</b>					
RT-PCR primers: <b>A-1C612F/NK61</b>		Genotype/strain:					
No. of nt determined: <b>620</b>		Seq. filename: <b>BHU03-35</b>					
No. nt in gene: <b>639</b>		Date sequence last updated: <b>24/02/2004</b>					
No. of ambiguities: <b>2</b>		Total no. of comparisons made: <b>663</b>					
Comments:							
<b>Ten Most Closely Related Viruses</b>							
Pos.	Virus name	Filename	No. nt compared	No. nt matched	No. of ambiguities	% Identity	% Difference
1	A/BHU/41/2002	BHU02-41	620	617	2	99.52	0.48
2	A/BHU/6/2003	BHU03-06	548	545	4	99.45	0.55
3	A/BHU/7/2003	BHU03-07	620	616	2	99.35	0.65
4	A/BHU/8/2003	BHU03-08	589	584	2	99.15	0.85
5	A/BHU/27/2003	BHU03-27	620	609	2	98.23	1.77
6	A/BHU/40/2003	BHU03-40	601	588	4	97.84	2.16
7	A/MCD/6/96	MCD96-06	163	157	2	96.32	3.68
8	A/MCD/5/96	MCD96-05	161	155	4	96.27	3.73
9	A/SAU/24/95	SAU95-24	157	151	1	96.18	3.82
10	A/SAU/35/94	SAU94-35	163	156	2	95.71	4.29
<b>Relationships to Reference Virus Strains</b>							
Pos.	Virus name	Filename	No. nt compared	No. nt matched	No. of ambiguities	% Identity	% Difference
1	A/SAU/23/86	SAU86-23	300	264	15	88.00	12.00
2	A/SAU/41/91	SAU91-41	131	114	5	87.02	12.98
3	A/IND/7/82 (1980)	IND82-07	251	216	18	86.06	13.94
4	A22/IRQ/24/64	IRQ64-24	620	529	2	85.32	14.68
5	A/IRN/1/96	IRN96-01	353	294	13	83.29	16.71
6	A/IRN/22/99	IRN99-22	592	493	22	83.28	16.72
7	A/TAI/1188/87*	TAI87-AD	617	509	2	82.50	17.50
8	A/IRN/87	IRN87--M	616	508	3	82.47	17.53
9	A/TAI/2/97	TAI97-02	591	473	7	80.03	19.97
10	A24/Cruzeiro/BRA/55	BRA55--C	620	493	2	79.52	20.48
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: <b>A</b>		Report date: 16/02/2004					
Virus isolate: <b>BHU/40/2003</b>							
Material used: 10% epith susp							
Region sequenced: VP1		Topotype: Asia					
RT-PCR primers: A-1C612F/NK61		Genotype/strain: not designated					
No. of nt determined: 620		Seq. filename: BHU03-40					
No. nt in gene: 639		Date sequence last updated: 27/01/2004					
No. of ambiguities: 2		Total no. of comparisons made: 647					
Comments:							
<b>Ten Most Closely Related Viruses</b>							
Pos.	Virus name	Filename	No. nt compared	No. nt matched	No. of ambiguities	% Identity	% Difference
1	A/BHU/41/2002	BHU02-41	620	610	2	98.39	1.61
2	A/BHU/6/2003	BHU03-06	531	522	4	98.31	1.69
3	A/BHU/8/2003	BHU03-08	587	576	2	98.13	1.87
4	A/BHU/7/2003	BHU03-07	620	608	2	98.06	1.94
5	A/BHU/27/2003	BHU03-27	620	608	2	98.06	1.94
6	A/IND/148/93*	IND93148	617	589	2	95.46	4.54
7	A/IND/96/96*	IND96-96	605	575	14	95.04	4.96
8	A/SAU/24/95	SAU95-24	157	149	1	94.90	5.10
9	A/IND/299/94*	IND94299	617	585	2	94.81	5.19
10	A/SAU/35/94	SAU94-35	150	142	1	94.67	5.33
<b>Relationships to Reference Virus Strains</b>							
Pos.	Virus name	Filename	No. nt compared	No. nt matched	No. of ambiguities	% Identity	% Difference
1	A/SAU/23/86	SAU86-23	285	248	13	87.02	12.98
2	A/SAU/41/91	SAU91-41	115	100	4	86.96	13.04
3	A/IND/7/82 (1980)	IND82-07	235	199	17	84.68	15.32
4	A22/IRQ/24/64	IRQ64-24	620	525	2	84.68	15.32
5	A/IRN/22/99	IRN99-22	597	501	22	83.92	16.08
6	A/IRN/87	IRN87--M	616	512	3	83.12	16.88
7	A/IRN/1/96	IRN96-01	353	293	11	83.00	17.00
8	A/TAI/2/97	TAI97-02	608	489	7	80.43	19.57
9	A24/Cruzeiro/BRA/55	BRA55--C	620	492	2	79.35	20.65
nt, nucleotides							
*, not a WRLFMD reference number							

# Report on: FMDV A Bhutan 2003



Unrooted Neighbor-joining tree based on a comparison of the complete VP1 gene. The tree was outgroup-rooted using the Euro-SA toptotype viruses.

\* not a WRLFMD ref. no.

, 19/02/2004