

FAO World Reference Laboratory for Foot-and-Mouth Disease (WRLFMD)

Genotyping Report

Report Date for this Batch: 23 March 2016

FMDV type O

Country: Nepal

Period: 2015

No. of samples: 16

BATCH: WRLFMD/2016/00004



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FAO World Reference Laboratory for FMD Genotyping Report

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Serotype: O WRLFMD Ref No: NEP/1/2015 Batch No: WRLFMD/2016/00004 Sender Ref: 2071/72(37) Location: Kathmandu, Nepal Date collected: 18/02/2015 Date received by WRLFMD: 19/01/2016 Date received for sequencing: 09/03/2016 Species: Cattle Material used: BTy1 28/02/2016 Region sequenced: VP1 RT-PCR primers: O-1C244F/EUR-2B52R O-1C272F/EUR-2B52R	Report date: 23/03/2016 Reported by: N.J. Knowles Checked by: K. Bachanek-Bankowska Topotype: ME-SA Genotype/strain: PanAsia-2 ^{KAT-15} Sequence filename: NEP15-01.SEQ Date sequence last updated: 22/03/2016 No. of Nt determined: 638 No. of ambiguities: 1 Gene length: 639 Total no. of comparisons: 4277 Min. no. of nt for comparison: 600 Total turn-around time: 64 days Sequencing time: 14 days
Comments: This sequence represents a new PanAsia-2 sublineage which we propose is named KAT-15 (from KATmandu).	

Most Closely Related Viruses									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	O/AFG/12/2010	AFG10-12	638	588	0	92.16	7.84	ME-SA	PanAsia-2 ^{BAL-09}
2	O/AFG/13/2010	AFG10-13	638	587	0	92.01	7.99	ME-SA	PanAsia-2 ^{BAL-09}
3	O/AFG/4/2010	AFG10-04	638	587	0	92.01	7.99	ME-SA	PanAsia-2 ^{BAL-09}
4	O/AFG/5/2010	AFG10-05	638	587	0	92.01	7.99	ME-SA	PanAsia-2 ^{BAL-09}
5	O/KUW/1/2016	KUW16-01	638	587	0	92.01	7.99	ME-SA	PanAsia-2 ^{BAL-09}
6	O/KUW/2/2016	KUW16-02	638	587	0	92.01	7.99	ME-SA	PanAsia-2 ^{BAL-09}
7	O/KUW/4/2016	KUW16-04	638	587	0	92.01	7.99	ME-SA	PanAsia-2 ^{BAL-09}
8	O/TUR/34/2014	TUR14-34	638	587	0	92.01	7.99	ME-SA	PanAsia-2 ^{FAR-09}
9	O/AFG/109/2010	AFG10109	638	586	0	91.85	8.15	ME-SA	PanAsia-2 ^{BAL-09}
10	O/AFG/19/2010	AFG10-19	638	586	0	91.85	8.15	ME-SA	PanAsia-2 ^{BAL-09}
Most Closely Related Reference Viruses									
(see http://www.wrlfmd.org/fmd_genotyping/prototypes.htm)									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	O/IRN/18/2010	IRN10-18	638	584	0	91.54	8.46	ME-SA	PanAsia-2 ^{BAL-09}
2	O/IRN/31/2009	IRN09-31	638	582	0	91.22	8.78	ME-SA	PanAsia-2 ^{FAR-09}
3	O/IRN/8/2005	IRN05-08	638	579	0	90.75	9.25	ME-SA	PanAsia-2
4	O/PAK/16/2010	PAK10-16	638	576	0	90.28	9.72	ME-SA	PanAsia-2 ^{PUN-10}
5	O/IRN/88/2009	IRN09-88	638	573	0	89.81	10.19	ME-SA	PanAsia-2 ^{ANT-10}
6	O/TUR/257/2008* (FMDI)	TUR08-AD	638	569	0	89.18	10.82	ME-SA	PanAsia-2 ^{TER-08}
7	O/TUR/264/2009* (FMDI)	TUR09-AK	638	568	0	89.03	10.97	ME-SA	PanAsia-2 ^{SAN-09}
8	O/UKG/35/2001 (AJ539141)	UKG01-35	638	567	0	88.87	11.13	ME-SA	PanAsia
9	O/KUW/3/97 (DQ164904)	KUW97-03	638	562	0	88.09	11.91	ME-SA	Ind-2001a
10	O/OMN/7/2001 (DQ164941)	OMN01-07	638	561	0	87.93	12.07	ME-SA	Ind-2001b

nt, nucleotides

*, not a WRLFMD reference number

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Serotype: O	Report date: 23/03/2016
WRLFMD Ref No: NEP/3/2015	Reported by: N.J. Knowles
Batch No: WRLFMD/2016/00004	Checked by: K. Bachanek-Bankowska
Sender Ref: 2071/72(40)	
Location: Bhaktapur, Nepal	Topotype: ME-SA
Date collected: 23/02/2015	Genotype/strain: Ind-2001d
Date received by WRLFMD: 19/01/2016	Sequence filename: NEP15-03.SEQ
Date received for sequencing: 09/03/2016	Date sequence last updated: 22/03/2016
Species: Cattle	No. of Nt determined: 639
Material used: BTy1 28/02/2016	No. of ambiguities: 0
Region sequenced: VP1	Gene length: 639
RT-PCR primers: O-1C244F/EUR-2B52R	Total no. of comparisons: 4277
O-1C272F/EUR-2B52R	Min. no. of nt for comparison: 600
	Total turn-around time: 64 days
	Sequencing time: 14 days
Comments:	

Most Closely Related Viruses									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	O/NEP/4/2015	NEP15-04	639	636	0	99.53	0.47	ME-SA	Ind-2001d
2	O/IND127/2013* (KM264359)	IND13-AC	639	618	0	96.71	3.29	ME-SA	Ind-2001d
3	O/NEP/11/2012 (KM921849)	NEP12-11	639	616	0	96.40	3.60	ME-SA	Ind-2001d
4	O/NEP/13/2012 (KM921850)	NEP12-13	639	616	0	96.40	3.60	ME-SA	Ind-2001d
5	O/IND50/2013* (KM264358)	IND13-AA	639	615	0	96.24	3.76	ME-SA	Ind-2001d
6	O/IND52/2013* (KM264360)	IND13-AB	639	615	0	96.24	3.76	ME-SA	Ind-2001d
7	O/NEP/10/2012 (KM921848)	NEP12-10	639	615	0	96.24	3.76	ME-SA	Ind-2001d
8	O/NEP/16/2012 (KM921851)	NEP12-16	639	615	0	96.24	3.76	ME-SA	Ind-2001d
9	O/IND205/2013* (KM264362)	IND13-AF	639	614	0	96.09	3.91	ME-SA	Ind-2001d
10	O/NEP/6/2014 (KM921865)	NEP14-06	639	614	0	96.09	3.91	ME-SA	Ind-2001d
Most Closely Related Reference Viruses									
(see http://www.wrlfmd.org/fmd_genotyping/prototypes.htm)									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	O/BHU/3/2009 (KM921814)	BHU09-03	639	611	0	95.62	4.38	ME-SA	Ind-2001d
2	O/OMN/7/2001 (DQ164941)	OMN01-07	639	590	0	92.33	7.67	ME-SA	Ind-2001b
3	O/KUW/3/97 (DQ164904)	KUW97-03	639	589	0	92.18	7.82	ME-SA	Ind-2001a
4	O/UAE/4/2008 (KM921876)	UAE08-04	636	577	0	90.72	9.28	ME-SA	Ind-2001c
5	O/IRN/31/2009	IRN09-31	639	573	0	89.67	10.33	ME-SA	PanAsia-2 ^{FAR-09}
6	O/PAK/16/2010	PAK10-16	639	565	0	88.42	11.58	ME-SA	PanAsia-2 ^{PUN-10}
7	O/UKG/35/2001 (AJ539141)	UKG01-35	639	565	0	88.42	11.58	ME-SA	PanAsia
8	O/TUR/257/2008* (FMDI)	TUR08-AD	639	564	0	88.26	11.74	ME-SA	PanAsia-2 ^{TER-08}
9	O/IRN/18/2010	IRN10-18	639	563	0	88.11	11.89	ME-SA	PanAsia-2 ^{BAL-09}
10	O/IRN/8/2005	IRN05-08	639	563	0	88.11	11.89	ME-SA	PanAsia-2

nt, nucleotides

*, not a WRLFMD reference number

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Serotype: O	Report date: 23/03/2016
WRLFMD Ref No: NEP/4/2015	Reported by: N.J. Knowles
Batch No: WRLFMD/2016/00004	Checked by: K. Bachanek-Bankowska
Sender Ref: 2071/72(49)	
Location: Kaski, Nepal	Topotype: ME-SA
Date collected: 26/03/2015	Genotype/strain: Ind-2001d
Date received by WRLFMD: 19/01/2016	Sequence filename: NEP15-04.SEQ
Date received for sequencing: 09/03/2016	Date sequence last updated: 22/03/2016
Species: Cattle	No. of Nt determined: 639
Material used: BTy1 28/02/2016	No. of ambiguities: 0
Region sequenced: VP1	Gene length: 639
RT-PCR primers: O-1C244F/EUR-2B52R	Total no. of comparisons: 4277
O-1C272F/EUR-2B52R	Min. no. of nt for comparison: 600
	Total turn-around time: 64 days
	Sequencing time: 14 days
Comments:	

Most Closely Related Viruses									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	O/NEP/3/2015	NEP15-03	639	636	0	99.53	0.47	ME-SA	Ind-2001d
2	O/IND127/2013* (KM264359)	IND13-AC	639	617	0	96.56	3.44	ME-SA	Ind-2001d
3	O/NEP/11/2012 (KM921849)	NEP12-11	639	615	0	96.24	3.76	ME-SA	Ind-2001d
4	O/NEP/13/2012 (KM921850)	NEP12-13	639	615	0	96.24	3.76	ME-SA	Ind-2001d
5	O/IND50/2013* (KM264358)	IND13-AA	639	614	0	96.09	3.91	ME-SA	Ind-2001d
6	O/IND52/2013* (KM264360)	IND13-AB	639	614	0	96.09	3.91	ME-SA	Ind-2001d
7	O/NEP/10/2012 (KM921848)	NEP12-10	639	614	0	96.09	3.91	ME-SA	Ind-2001d
8	O/NEP/16/2012 (KM921851)	NEP12-16	639	614	0	96.09	3.91	ME-SA	Ind-2001d
9	O/IND/102/2011* (KC506495)	IND11102	639	613	0	95.93	4.07	ME-SA	Ind-2001d
10	O/IND/113/2011* (KC506496)	IND11113	639	613	0	95.93	4.07	ME-SA	Ind-2001d
Most Closely Related Reference Viruses									
(see http://www.wrlfmd.org/fmd_genotyping/prototypes.htm)									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	O/BHU/3/2009 (KM921814)	BHU09-03	639	610	0	95.46	4.54	ME-SA	Ind-2001d
2	O/OMN/7/2001 (DQ164941)	OMN01-07	639	589	0	92.18	7.82	ME-SA	Ind-2001b
3	O/KUW/3/97 (DQ164904)	KUW97-03	639	588	0	92.02	7.98	ME-SA	Ind-2001a
4	O/UAE/4/2008 (KM921876)	UAE08-04	636	578	0	90.88	9.12	ME-SA	Ind-2001c
5	O/IRN/31/2009	IRN09-31	639	572	0	89.51	10.49	ME-SA	PanAsia-2 ^{FAR-09}
6	O/IRN/18/2010	IRN10-18	639	564	0	88.26	11.74	ME-SA	PanAsia-2 ^{BAL-09}
7	O/PAK/16/2010	PAK10-16	639	564	0	88.26	11.74	ME-SA	PanAsia-2 ^{PUN-10}
8	O/UKG/35/2001 (AJ539141)	UKG01-35	639	564	0	88.26	11.74	ME-SA	PanAsia
9	O/TUR/257/2008* (FMDI)	TUR08-AD	639	563	0	88.11	11.89	ME-SA	PanAsia-2 ^{TER-08}
10	O/IRN/8/2005	IRN05-08	639	562	0	87.95	12.05	ME-SA	PanAsia-2

nt, nucleotides

*, not a WRLFMD reference number

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Serotype: O	Report date: 23/03/2016
WRLFMD Ref No: NEP/9/2015	Reported by: N.J. Knowles
Batch No: WRLFMD/2016/00004	Checked by: K. Bachanek-Bankowska
Sender Ref: 2072/73(43)	
Location: Bhaktapur, Nepal	Topotype: ME-SA
Date collected: 01/11/2015	Genotype/strain: Ind-2001d
Date received by WRLFMD: 19/01/2016	Sequence filename: NEP15-09.SEQ
Date received for sequencing: 09/03/2016	Date sequence last updated: 22/03/2016
Species: Cattle	No. of Nt determined: 638
Material used: BTy1 28/02/2016	No. of ambiguities: 1
Region sequenced: VP1	Gene length: 639
RT-PCR primers: O-1C244F/EUR-2B52R	Total no. of comparisons: 4277
O-1C272F/EUR-2B52R	Min. no. of nt for comparison: 600
	Total turn-around time: 64 days
	Sequencing time: 14 days
Comments:	

Most Closely Related Viruses

Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	O/NEP/10/2015	NEP15-10	638	638	0	100.00	0.00	ME-SA	Ind-2001d
2	O/NEP/11/2015	NEP15-11	638	638	0	100.00	0.00	ME-SA	Ind-2001d
3	O/NEP/12/2015	NEP15-12	638	637	0	99.84	0.16	ME-SA	Ind-2001d
4	O/NEP/17/2015	NEP15-17	638	633	0	99.22	0.78	ME-SA	Ind-2001d
5	O/NEP/19/2015	NEP15-19	638	633	0	99.22	0.78	ME-SA	Ind-2001d
6	O/NEP/14/2015	NEP15-14	638	629	0	98.59	1.41	ME-SA	Ind-2001d
7	O/NEP/15/2015	NEP15-15	638	629	0	98.59	1.41	ME-SA	Ind-2001d
8	O/NEP/18/2015	NEP15-18	638	628	0	98.43	1.57	ME-SA	Ind-2001d
9	O/UAE/1/2015	UAE15-01	638	628	0	98.43	1.57	ME-SA	Ind-2001d
10	O/NEP/21/2015	NEP15-21	638	627	0	98.28	1.72	ME-SA	Ind-2001d

Most Closely Related Reference Viruses

(see http://www.wrlfmd.org/fmd_genotyping/prototypes.htm)

Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	O/BHU/3/2009 (KM921814)	BHU09-03	638	601	0	94.20	5.80	ME-SA	Ind-2001d
2	O/OMN/7/2001 (DQ164941)	OMN01-07	638	589	0	92.32	7.68	ME-SA	Ind-2001b
3	O/KUW/3/97 (DQ164904)	KUW97-03	638	581	0	91.07	8.93	ME-SA	Ind-2001a
4	O/UAE/4/2008 (KM921876)	UAE08-04	635	573	0	90.24	9.76	ME-SA	Ind-2001c
5	O/IRN/31/2009	IRN09-31	638	565	0	88.56	11.44	ME-SA	PanAsia-2 ^{FAR-09}
6	O/UKG/35/2001 (AJ539141)	UKG01-35	638	565	0	88.56	11.44	ME-SA	PanAsia
7	O/IRN/8/2005	IRN05-08	638	561	0	87.93	12.07	ME-SA	PanAsia-2
8	O/IRN/18/2010	IRN10-18	638	560	0	87.77	12.23	ME-SA	PanAsia-2 ^{BAL-09}
9	O/IRN/88/2009	IRN09-88	638	560	0	87.77	12.23	ME-SA	PanAsia-2 ^{ANT-10}
10	O/PAK/16/2010	PAK10-16	638	560	0	87.77	12.23	ME-SA	PanAsia-2 ^{PUN-10}

nt, nucleotides

*, not a WRLFMD reference number

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Serotype: O	Report date: 23/03/2016
WRLFMD Ref No: NEP/10/2015	Reported by: N.J. Knowles
Batch No: WRLFMD/2016/00004	Checked by: K. Bachanek-Bankowska
Sender Ref: 2072/73(44)	
Location: Bhaktapur, Nepal	Topotype: ME-SA
Date collected: 01/11/2015	Genotype/strain: Ind-2001d
Date received by WRLFMD: 19/01/2016	Sequence filename: NEP15-10.SEQ
Date received for sequencing: 09/03/2016	Date sequence last updated: 22/03/2016
Species: Cattle	No. of Nt determined: 639
Material used: BTy1 01/03/2016	No. of ambiguities: 0
Region sequenced: VP1	Gene length: 639
RT-PCR primers: O-1C244F/EUR-2B52R	Total no. of comparisons: 4277
O-1C272F/EUR-2B52R	Min. no. of nt for comparison: 600
	Total turn-around time: 64 days
	Sequencing time: 14 days
Comments:	

Most Closely Related Viruses									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	O/NEP/11/2015	NEP15-11	639	639	0	100.00	0.00	ME-SA	Ind-2001d
2	O/NEP/9/2015	NEP15-09	638	638	1	100.00	0.00	ME-SA	Ind-2001d
3	O/NEP/12/2015	NEP15-12	639	638	0	99.84	0.16	ME-SA	Ind-2001d
4	O/NEP/17/2015	NEP15-17	639	633	0	99.06	0.94	ME-SA	Ind-2001d
5	O/NEP/19/2015	NEP15-19	639	633	0	99.06	0.94	ME-SA	Ind-2001d
6	O/NEP/14/2015	NEP15-14	639	630	0	98.59	1.41	ME-SA	Ind-2001d
7	O/NEP/15/2015	NEP15-15	639	630	0	98.59	1.41	ME-SA	Ind-2001d
8	O/NEP/18/2015	NEP15-18	639	629	0	98.44	1.56	ME-SA	Ind-2001d
9	O/UAE/1/2015	UAE15-01	639	629	0	98.44	1.56	ME-SA	Ind-2001d
10	O/NEP/21/2015	NEP15-21	639	628	0	98.28	1.72	ME-SA	Ind-2001d
Most Closely Related Reference Viruses									
(see http://www.wrlfmd.org/fmd_genotyping/prototypes.htm)									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	O/BHU/3/2009 (KM921814)	BHU09-03	639	602	0	94.21	5.79	ME-SA	Ind-2001d
2	O/OMN/7/2001 (DQ164941)	OMN01-07	639	590	0	92.33	7.67	ME-SA	Ind-2001b
3	O/KUW/3/97 (DQ164904)	KUW97-03	639	582	0	91.08	8.92	ME-SA	Ind-2001a
4	O/UAE/4/2008 (KM921876)	UAE08-04	636	574	0	90.25	9.75	ME-SA	Ind-2001c
5	O/IRN/31/2009	IRN09-31	639	565	0	88.42	11.58	ME-SA	PanAsia-2 ^{FAR-09}
6	O/UKG/35/2001 (AJ539141)	UKG01-35	639	565	0	88.42	11.58	ME-SA	PanAsia
7	O/IRN/8/2005	IRN05-08	639	561	0	87.79	12.21	ME-SA	PanAsia-2
8	O/IRN/18/2010	IRN10-18	639	560	0	87.64	12.36	ME-SA	PanAsia-2 ^{BAL-09}
9	O/IRN/88/2009	IRN09-88	639	560	0	87.64	12.36	ME-SA	PanAsia-2 ^{ANT-10}
10	O/PAK/16/2010	PAK10-16	639	560	0	87.64	12.36	ME-SA	PanAsia-2 ^{PUN-10}

nt, nucleotides

*, not a WRLFMD reference number

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Serotype: O	Report date: 23/03/2016
WRLFMD Ref No: NEP/11/2015	Reported by: N.J. Knowles
Batch No: WRLFMD/2016/00004	Checked by: K. Bachanek-Bankowska
Sender Ref: 2072/73(45)	
Location: Bhaktapur, Nepal	Topotype: ME-SA
Date collected: 01/11/2015	Genotype/strain: Ind-2001d
Date received by WRLFMD: 19/01/2016	Sequence filename: NEP15-11.SEQ
Date received for sequencing: 09/03/2016	Date sequence last updated: 22/03/2016
Species: Cattle	No. of Nt determined: 639
Material used: BTy1 01/03/2016	No. of ambiguities: 0
Region sequenced: VP1	Gene length: 639
RT-PCR primers: O-1C244F/EUR-2B52R	Total no. of comparisons: 4277
O-1C272F/EUR-2B52R	Min. no. of nt for comparison: 600
	Total turn-around time: 64 days
	Sequencing time: 14 days
Comments:	

Most Closely Related Viruses									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	O/NEP/10/2015	NEP15-10	639	639	0	100.00	0.00	ME-SA	Ind-2001d
2	O/NEP/9/2015	NEP15-09	638	638	1	100.00	0.00	ME-SA	Ind-2001d
3	O/NEP/12/2015	NEP15-12	639	638	0	99.84	0.16	ME-SA	Ind-2001d
4	O/NEP/17/2015	NEP15-17	639	633	0	99.06	0.94	ME-SA	Ind-2001d
5	O/NEP/19/2015	NEP15-19	639	633	0	99.06	0.94	ME-SA	Ind-2001d
6	O/NEP/14/2015	NEP15-14	639	630	0	98.59	1.41	ME-SA	Ind-2001d
7	O/NEP/15/2015	NEP15-15	639	630	0	98.59	1.41	ME-SA	Ind-2001d
8	O/NEP/18/2015	NEP15-18	639	629	0	98.44	1.56	ME-SA	Ind-2001d
9	O/UAE/1/2015	UAE15-01	639	629	0	98.44	1.56	ME-SA	Ind-2001d
10	O/NEP/21/2015	NEP15-21	639	628	0	98.28	1.72	ME-SA	Ind-2001d
Most Closely Related Reference Viruses									
(see http://www.wrlfmd.org/fmd_genotyping/prototypes.htm)									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	O/BHU/3/2009 (KM921814)	BHU09-03	639	602	0	94.21	5.79	ME-SA	Ind-2001d
2	O/OMN/7/2001 (DQ164941)	OMN01-07	639	590	0	92.33	7.67	ME-SA	Ind-2001b
3	O/KUW/3/97 (DQ164904)	KUW97-03	639	582	0	91.08	8.92	ME-SA	Ind-2001a
4	O/UAE/4/2008 (KM921876)	UAE08-04	636	574	0	90.25	9.75	ME-SA	Ind-2001c
5	O/IRN/31/2009	IRN09-31	639	565	0	88.42	11.58	ME-SA	PanAsia-2 ^{FAR-09}
6	O/UKG/35/2001 (AJ539141)	UKG01-35	639	565	0	88.42	11.58	ME-SA	PanAsia
7	O/IRN/8/2005	IRN05-08	639	561	0	87.79	12.21	ME-SA	PanAsia-2
8	O/IRN/18/2010	IRN10-18	639	560	0	87.64	12.36	ME-SA	PanAsia-2 ^{BAL-09}
9	O/IRN/88/2009	IRN09-88	639	560	0	87.64	12.36	ME-SA	PanAsia-2 ^{ANT-10}
10	O/PAK/16/2010	PAK10-16	639	560	0	87.64	12.36	ME-SA	PanAsia-2 ^{PUN-10}

nt, nucleotides

*, not a WRLFMD reference number

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Serotype: O	Report date: 23/03/2016
WRLFMD Ref No: NEP/12/2015	Reported by: N.J. Knowles
Batch No: WRLFMD/2016/00004	Checked by: K. Bachanek-Bankowska
Sender Ref: 2072/73(46)	
Location: Bhaktapur, Nepal	Topotype: ME-SA
Date collected: 01/11/2015	Genotype/strain: Ind-2001d
Date received by WRLFMD: 19/01/2016	Sequence filename: NEP15-12.SEQ
Date received for sequencing: 09/03/2016	Date sequence last updated: 22/03/2016
Species: Cattle	No. of Nt determined: 639
Material used: BTy1 02/03/2016	No. of ambiguities: 0
Region sequenced: VP1	Gene length: 639
RT-PCR primers: O-1C244F/EUR-2B52R	Total no. of comparisons: 4277
O-1C272F/EUR-2B52R	Min. no. of nt for comparison: 600
	Total turn-around time: 64 days
	Sequencing time: 14 days
Comments:	

Most Closely Related Viruses									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	O/NEP/10/2015	NEP15-10	639	638	0	99.84	0.16	ME-SA	Ind-2001d
2	O/NEP/11/2015	NEP15-11	639	638	0	99.84	0.16	ME-SA	Ind-2001d
3	O/NEP/9/2015	NEP15-09	638	637	1	99.84	0.16	ME-SA	Ind-2001d
4	O/NEP/17/2015	NEP15-17	639	632	0	98.90	1.10	ME-SA	Ind-2001d
5	O/NEP/19/2015	NEP15-19	639	632	0	98.90	1.10	ME-SA	Ind-2001d
6	O/NEP/14/2015	NEP15-14	639	629	0	98.44	1.56	ME-SA	Ind-2001d
7	O/NEP/15/2015	NEP15-15	639	629	0	98.44	1.56	ME-SA	Ind-2001d
8	O/NEP/18/2015	NEP15-18	639	628	0	98.28	1.72	ME-SA	Ind-2001d
9	O/UAE/1/2015	UAE15-01	639	628	0	98.28	1.72	ME-SA	Ind-2001d
10	O/NEP/21/2015	NEP15-21	639	627	0	98.12	1.88	ME-SA	Ind-2001d
Most Closely Related Reference Viruses									
(see http://www.wrlfmd.org/fmd_genotyping/prototypes.htm)									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	O/BHU/3/2009 (KM921814)	BHU09-03	639	601	0	94.05	5.95	ME-SA	Ind-2001d
2	O/OMN/7/2001 (DQ164941)	OMN01-07	639	589	0	92.18	7.82	ME-SA	Ind-2001b
3	O/KUW/3/97 (DQ164904)	KUW97-03	639	581	0	90.92	9.08	ME-SA	Ind-2001a
4	O/UAE/4/2008 (KM921876)	UAE08-04	636	575	0	90.41	9.59	ME-SA	Ind-2001c
5	O/IRN/31/2009	IRN09-31	639	564	0	88.26	11.74	ME-SA	PanAsia-2 ^{FAR-09}
6	O/UKG/35/2001 (AJ539141)	UKG01-35	639	564	0	88.26	11.74	ME-SA	PanAsia
7	O1/Manisa/TUR/69 (AY593823)	TUR69--G	639	561	0	87.79	12.21	ME-SA	unnamed
8	O/IRN/8/2005	IRN05-08	639	560	0	87.64	12.36	ME-SA	PanAsia-2
9	O/IRN/18/2010	IRN10-18	639	559	0	87.48	12.52	ME-SA	PanAsia-2 ^{BAL-09}
10	O/IRN/88/2009	IRN09-88	639	559	0	87.48	12.52	ME-SA	PanAsia-2 ^{ANT-10}

nt, nucleotides

*, not a WRLFMD reference number

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Serotype: O	Report date: 23/03/2016
WRLFMD Ref No: NEP/14/2015	Reported by: N.J. Knowles
Batch No: WRLFMD/2016/00004	Checked by: K. Bachanek-Bankowska
Sender Ref: 2072/73(47)	
Location: Kavre, Nepal	Topotype: ME-SA
Date collected: 03/11/2015	Genotype/strain: Ind-2001d
Date received by WRLFMD: 19/01/2016	Sequence filename: NEP15-14.SEQ
Date received for sequencing: 09/03/2016	Date sequence last updated: 22/03/2016
Species: Cattle	No. of Nt determined: 639
Material used: BTy1 03/03/2016	No. of ambiguities: 0
Region sequenced: VP1	Gene length: 639
RT-PCR primers: O-1C244F/EUR-2B52R	Total no. of comparisons: 4277
O-1C272F/EUR-2B52R	Min. no. of nt for comparison: 600
	Total turn-around time: 64 days
	Sequencing time: 14 days
Comments:	

Most Closely Related Viruses									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	O/NEP/15/2015	NEP15-15	639	639	0	100.00	0.00	ME-SA	Ind-2001d
2	O/NEP/21/2015	NEP15-21	639	635	0	99.37	0.63	ME-SA	Ind-2001d
3	O/NEP/23/2015	NEP15-23	639	635	0	99.37	0.63	ME-SA	Ind-2001d
4	O/NEP/24/2015	NEP15-24	639	635	0	99.37	0.63	ME-SA	Ind-2001d
5	O/NEP/18/2015	NEP15-18	639	634	0	99.22	0.78	ME-SA	Ind-2001d
6	O/NEP/25/2015	NEP15-25	639	634	0	99.22	0.78	ME-SA	Ind-2001d
7	O/NEP/17/2015	NEP15-17	639	632	0	98.90	1.10	ME-SA	Ind-2001d
8	O/NEP/19/2015	NEP15-19	639	632	0	98.90	1.10	ME-SA	Ind-2001d
9	O/NEP/10/2015	NEP15-10	639	630	0	98.59	1.41	ME-SA	Ind-2001d
10	O/NEP/11/2015	NEP15-11	639	630	0	98.59	1.41	ME-SA	Ind-2001d
Most Closely Related Reference Viruses									
(see http://www.wrlfmd.org/fmd_genotyping/prototypes.htm)									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	O/BHU/3/2009 (KM921814)	BHU09-03	639	599	0	93.74	6.26	ME-SA	Ind-2001d
2	O/OMN/7/2001 (DQ164941)	OMN01-07	639	589	0	92.18	7.82	ME-SA	Ind-2001b
3	O/KUW/3/97 (DQ164904)	KUW97-03	639	585	0	91.55	8.45	ME-SA	Ind-2001a
4	O/UAE/4/2008 (KM921876)	UAE08-04	636	571	0	89.78	10.22	ME-SA	Ind-2001c
5	O/UKG/35/2001 (AJ539141)	UKG01-35	639	568	0	88.89	11.11	ME-SA	PanAsia
6	O/IRN/31/2009	IRN09-31	639	564	0	88.26	11.74	ME-SA	PanAsia-2 ^{FAR-09}
7	O1/Manisa/TUR/69 (AY593823)	TUR69--G	639	561	0	87.79	12.21	ME-SA	unnamed
8	O/IRN/8/2005	IRN05-08	639	560	0	87.64	12.36	ME-SA	PanAsia-2
9	O/PAK/16/2010	PAK10-16	639	560	0	87.64	12.36	ME-SA	PanAsia-2 ^{PUN-10}
10	O/IRN/18/2010	IRN10-18	639	559	0	87.48	12.52	ME-SA	PanAsia-2 ^{BAL-09}

nt, nucleotides

*, not a WRLFMD reference number

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Serotype: O WRLFMD Ref No: NEP/15/2015 Batch No: WRLFMD/2016/00004 Sender Ref: 2072/73(48) Location: Kayre, Nepal Date collected: 03/11/2015 Date received by WRLFMD: 19/01/2016 Date received for sequencing: 18/03/2016 Species: Cattle Material used: BTy1 04/03/2016 & BTy2 05/03/2016 Region sequenced: VP1 RT-PCR primers: O-1C244F/EUR-2B52R O-1C272F/EUR-2B52R	Report date: 23/03/2016 Reported by: N.J. Knowles Checked by: K. Bachanek-Bankowska Topotype: ME-SA Genotype/strain: Ind-2001d Sequence filename: NEP15-15.SEQ Date sequence last updated: 22/03/2016 No. of Nt determined: 639 No. of ambiguities: 0 Gene length: 639 Total no. of comparisons: 4277 Min. no. of nt for comparison: 600 Total turn-around time: 64 days Sequencing time: 5 days
Comments:	

Most Closely Related Viruses									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	O/NEP/14/2015	NEP15-14	639	639	0	100.00	0.00	ME-SA	Ind-2001d
2	O/NEP/21/2015	NEP15-21	639	635	0	99.37	0.63	ME-SA	Ind-2001d
3	O/NEP/23/2015	NEP15-23	639	635	0	99.37	0.63	ME-SA	Ind-2001d
4	O/NEP/24/2015	NEP15-24	639	635	0	99.37	0.63	ME-SA	Ind-2001d
5	O/NEP/18/2015	NEP15-18	639	634	0	99.22	0.78	ME-SA	Ind-2001d
6	O/NEP/25/2015	NEP15-25	639	634	0	99.22	0.78	ME-SA	Ind-2001d
7	O/NEP/17/2015	NEP15-17	639	632	0	98.90	1.10	ME-SA	Ind-2001d
8	O/NEP/19/2015	NEP15-19	639	632	0	98.90	1.10	ME-SA	Ind-2001d
9	O/NEP/10/2015	NEP15-10	639	630	0	98.59	1.41	ME-SA	Ind-2001d
10	O/NEP/11/2015	NEP15-11	639	630	0	98.59	1.41	ME-SA	Ind-2001d
Most Closely Related Reference Viruses									
(see http://www.wrlfmd.org/fmd_genotyping/prototypes.htm)									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	O/BHU/3/2009 (KM921814)	BHU09-03	639	599	0	93.74	6.26	ME-SA	Ind-2001d
2	O/OMN/7/2001 (DQ164941)	OMN01-07	639	589	0	92.18	7.82	ME-SA	Ind-2001b
3	O/KUW/3/97 (DQ164904)	KUW97-03	639	585	0	91.55	8.45	ME-SA	Ind-2001a
4	O/UAE/4/2008 (KM921876)	UAE08-04	636	571	0	89.78	10.22	ME-SA	Ind-2001c
5	O/UKG/35/2001 (AJ539141)	UKG01-35	639	568	0	88.89	11.11	ME-SA	PanAsia
6	O/IRN/31/2009	IRN09-31	639	564	0	88.26	11.74	ME-SA	PanAsia-2 ^{FAR-09}
7	O1/Manisa/TUR/69 (AY593823)	TUR69--G	639	561	0	87.79	12.21	ME-SA	unnamed
8	O/IRN/8/2005	IRN05-08	639	560	0	87.64	12.36	ME-SA	PanAsia-2
9	O/PAK/16/2010	PAK10-16	639	560	0	87.64	12.36	ME-SA	PanAsia-2 ^{PUN-10}
10	O/IRN/18/2010	IRN10-18	639	559	0	87.48	12.52	ME-SA	PanAsia-2 ^{BAL-09}

nt, nucleotides

*, not a WRLFMD reference number

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Serotype: O	Report date: 23/03/2016
WRLFMD Ref No: NEP/17/2015	Reported by: N.J. Knowles
Batch No: WRLFMD/2016/00004	Checked by: K. Bachanek-Bankowska
Sender Ref: 2072/73(61)	
Location: Kathmandu, Nepal	Topotype: ME-SA
Date collected: 01/12/2015	Genotype/strain: Ind-2001d
Date received by WRLFMD: 19/01/2016	Sequence filename: NEP15-17.SEQ
Date received for sequencing: 09/03/2016	Date sequence last updated: 22/03/2016
Species: Cattle	No. of Nt determined: 639
Material used: BTy1 03/03/2016	No. of ambiguities: 0
Region sequenced: VP1	Gene length: 639
RT-PCR primers: O-1C244F/EUR-2B52R	Total no. of comparisons: 4277
O-1C272F/EUR-2B52R	Min. no. of nt for comparison: 600
	Total turn-around time: 64 days
	Sequencing time: 14 days
Comments:	

Most Closely Related Viruses									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	O/NEP/19/2015	NEP15-19	639	639	0	100.00	0.00	ME-SA	Ind-2001d
2	O/NEP/9/2015	NEP15-09	638	633	1	99.22	0.78	ME-SA	Ind-2001d
3	O/NEP/10/2015	NEP15-10	639	633	0	99.06	0.94	ME-SA	Ind-2001d
4	O/NEP/11/2015	NEP15-11	639	633	0	99.06	0.94	ME-SA	Ind-2001d
5	O/UAE/1/2015	UAE15-01	639	633	0	99.06	0.94	ME-SA	Ind-2001d
6	O/NEP/12/2015	NEP15-12	639	632	0	98.90	1.10	ME-SA	Ind-2001d
7	O/NEP/14/2015	NEP15-14	639	632	0	98.90	1.10	ME-SA	Ind-2001d
8	O/NEP/15/2015	NEP15-15	639	632	0	98.90	1.10	ME-SA	Ind-2001d
9	O/NEP/18/2015	NEP15-18	639	631	0	98.75	1.25	ME-SA	Ind-2001d
10	O/NEP/21/2015	NEP15-21	639	630	0	98.59	1.41	ME-SA	Ind-2001d
Most Closely Related Reference Viruses									
(see http://www.wrlfmd.org/fmd_genotyping/prototypes.htm)									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	O/BHU/3/2009 (KM921814)	BHU09-03	639	602	0	94.21	5.79	ME-SA	Ind-2001d
2	O/OMN/7/2001 (DQ164941)	OMN01-07	639	594	0	92.96	7.04	ME-SA	Ind-2001b
3	O/KUW/3/97 (DQ164904)	KUW97-03	639	586	0	91.71	8.29	ME-SA	Ind-2001a
4	O/UAE/4/2008 (KM921876)	UAE08-04	636	576	0	90.57	9.43	ME-SA	Ind-2001c
5	O/UKG/35/2001 (AJ539141)	UKG01-35	639	571	0	89.36	10.64	ME-SA	PanAsia
6	O/IRN/31/2009	IRN09-31	639	569	0	89.05	10.95	ME-SA	PanAsia-2 ^{FAR-09}
7	O/IRN/8/2005	IRN05-08	639	565	0	88.42	11.58	ME-SA	PanAsia-2
8	O1/Manisa/TUR/69 (AY593823)	TUR69--G	639	565	0	88.42	11.58	ME-SA	unnamed
9	O/IRN/88/2009	IRN09-88	639	564	0	88.26	11.74	ME-SA	PanAsia-2 ^{ANT-10}
10	O/PAK/16/2010	PAK10-16	639	564	0	88.26	11.74	ME-SA	PanAsia-2 ^{PUN-10}

nt, nucleotides

*, not a WRLFMD reference number

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Serotype: O	Report date: 23/03/2016
WRLFMD Ref No: NEP/18/2015	Reported by: N.J. Knowles
Batch No: WRLFMD/2016/00004	Checked by: K. Bachanek-Bankowska
Sender Ref: 2072/73(62)	
Location: Kathmandu, Nepal	Topotype: ME-SA
Date collected: 01/12/2015	Genotype/strain: Ind-2001d
Date received by WRLFMD: 19/01/2016	Sequence filename: NEP15-18.SEQ
Date received for sequencing: 09/03/2016	Date sequence last updated: 22/03/2016
Species: Pig	No. of Nt determined: 639
Material used: BTy1 03/03/2016	No. of ambiguities: 0
Region sequenced: VP1	Gene length: 639
RT-PCR primers: O-1C244F/EUR-2B52R	Total no. of comparisons: 4277
O-1C272F/EUR-2B52R	Min. no. of nt for comparison: 600
	Total turn-around time: 64 days
	Sequencing time: 14 days
Comments:	

Most Closely Related Viruses									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	O/NEP/14/2015	NEP15-14	639	634	0	99.22	0.78	ME-SA	Ind-2001d
2	O/NEP/15/2015	NEP15-15	639	634	0	99.22	0.78	ME-SA	Ind-2001d
3	O/NEP/21/2015	NEP15-21	639	634	0	99.22	0.78	ME-SA	Ind-2001d
4	O/NEP/23/2015	NEP15-23	639	634	0	99.22	0.78	ME-SA	Ind-2001d
5	O/NEP/24/2015	NEP15-24	639	634	0	99.22	0.78	ME-SA	Ind-2001d
6	O/NEP/25/2015	NEP15-25	639	633	0	99.06	0.94	ME-SA	Ind-2001d
7	O/NEP/17/2015	NEP15-17	639	631	0	98.75	1.25	ME-SA	Ind-2001d
8	O/NEP/19/2015	NEP15-19	639	631	0	98.75	1.25	ME-SA	Ind-2001d
9	O/NEP/10/2015	NEP15-10	639	629	0	98.44	1.56	ME-SA	Ind-2001d
10	O/NEP/11/2015	NEP15-11	639	629	0	98.44	1.56	ME-SA	Ind-2001d
Most Closely Related Reference Viruses									
(see http://www.wrlfmd.org/fmd_genotyping/prototypes.htm)									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	O/BHU/3/2009 (KM921814)	BHU09-03	639	598	0	93.58	6.42	ME-SA	Ind-2001d
2	O/OMN/7/2001 (DQ164941)	OMN01-07	639	590	0	92.33	7.67	ME-SA	Ind-2001b
3	O/KUW/3/97 (DQ164904)	KUW97-03	639	584	0	91.39	8.61	ME-SA	Ind-2001a
4	O/UAE/4/2008 (KM921876)	UAE08-04	636	572	0	89.94	10.06	ME-SA	Ind-2001c
5	O/UKG/35/2001 (AJ539141)	UKG01-35	639	568	0	88.89	11.11	ME-SA	PanAsia
6	O/IRN/31/2009	IRN09-31	639	564	0	88.26	11.74	ME-SA	PanAsia-2 ^{FAR-09}
7	O1/Manisa/TUR/69 (AY593823)	TUR69--G	639	564	0	88.26	11.74	ME-SA	unnamed
8	O/IRN/8/2005	IRN05-08	639	560	0	87.64	12.36	ME-SA	PanAsia-2
9	O/PAK/16/2010	PAK10-16	639	559	0	87.48	12.52	ME-SA	PanAsia-2 ^{PUN-10}
10	O/TUR/257/2008* (FMDI)	TUR08-AD	639	559	0	87.48	12.52	ME-SA	PanAsia-2 ^{TER-08}

nt, nucleotides

*, not a WRLFMD reference number

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Serotype: O	Report date: 23/03/2016
WRLFMD Ref No: NEP/19/2015	Reported by: N.J. Knowles
Batch No: WRLFMD/2016/00004	Checked by: K. Bachanek-Bankowska
Sender Ref: 2072/73(63)	
Location: Bhaktapur, Nepal	Topotype: ME-SA
Date collected: 02/12/2015	Genotype/strain: Ind-2001d
Date received by WRLFMD: 19/01/2016	Sequence filename: NEP15-19.SEQ
Date received for sequencing: 09/03/2016	Date sequence last updated: 22/03/2016
Species: Cattle	No. of Nt determined: 639
Material used: BTy1 03/03/2016	No. of ambiguities: 0
Region sequenced: VP1	Gene length: 639
RT-PCR primers: O-1C244F/EUR-2B52R	Total no. of comparisons: 4277
O-1C272F/EUR-2B52R	Min. no. of nt for comparison: 600
	Total turn-around time: 64 days
	Sequencing time: 14 days
Comments:	

Most Closely Related Viruses									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	O/NEP/17/2015	NEP15-17	639	639	0	100.00	0.00	ME-SA	Ind-2001d
2	O/NEP/9/2015	NEP15-09	638	633	1	99.22	0.78	ME-SA	Ind-2001d
3	O/NEP/10/2015	NEP15-10	639	633	0	99.06	0.94	ME-SA	Ind-2001d
4	O/NEP/11/2015	NEP15-11	639	633	0	99.06	0.94	ME-SA	Ind-2001d
5	O/UAE/1/2015	UAE15-01	639	633	0	99.06	0.94	ME-SA	Ind-2001d
6	O/NEP/12/2015	NEP15-12	639	632	0	98.90	1.10	ME-SA	Ind-2001d
7	O/NEP/14/2015	NEP15-14	639	632	0	98.90	1.10	ME-SA	Ind-2001d
8	O/NEP/15/2015	NEP15-15	639	632	0	98.90	1.10	ME-SA	Ind-2001d
9	O/NEP/18/2015	NEP15-18	639	631	0	98.75	1.25	ME-SA	Ind-2001d
10	O/NEP/21/2015	NEP15-21	639	630	0	98.59	1.41	ME-SA	Ind-2001d
Most Closely Related Reference Viruses									
(see http://www.wrlfmd.org/fmd_genotyping/prototypes.htm)									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	O/BHU/3/2009 (KM921814)	BHU09-03	639	602	0	94.21	5.79	ME-SA	Ind-2001d
2	O/OMN/7/2001 (DQ164941)	OMN01-07	639	594	0	92.96	7.04	ME-SA	Ind-2001b
3	O/KUW/3/97 (DQ164904)	KUW97-03	639	586	0	91.71	8.29	ME-SA	Ind-2001a
4	O/UAE/4/2008 (KM921876)	UAE08-04	636	576	0	90.57	9.43	ME-SA	Ind-2001c
5	O/UKG/35/2001 (AJ539141)	UKG01-35	639	571	0	89.36	10.64	ME-SA	PanAsia
6	O/IRN/31/2009	IRN09-31	639	569	0	89.05	10.95	ME-SA	PanAsia-2 ^{FAR-09}
7	O/IRN/8/2005	IRN05-08	639	565	0	88.42	11.58	ME-SA	PanAsia-2
8	O1/Manisa/TUR/69 (AY593823)	TUR69--G	639	565	0	88.42	11.58	ME-SA	unnamed
9	O/IRN/88/2009	IRN09-88	639	564	0	88.26	11.74	ME-SA	PanAsia-2 ^{ANT-10}
10	O/PAK/16/2010	PAK10-16	639	564	0	88.26	11.74	ME-SA	PanAsia-2 ^{PUN-10}

nt, nucleotides

*, not a WRLFMD reference number

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FAO World Reference Laboratory for FMD Genotyping Report

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Serotype: O	Report date: 23/03/2016
WRLFMD Ref No: NEP/21/2015	Reported by: N.J. Knowles
Batch No: WRLFMD/2016/00004	Checked by: K. Bachanek-Bankowska
Sender Ref: 2072/73(71)	
Location: Kathmandu, Nepal	Topotype: ME-SA
Date collected: 06/12/2015	Genotype/strain: Ind-2001d
Date received by WRLFMD: 19/01/2016	Sequence filename: NEP15-21.SEQ
Date received for sequencing: 09/03/2016	Date sequence last updated: 22/03/2016
Species: Cattle	No. of Nt determined: 639
Material used: BTy1 04/03/2016	No. of ambiguities: 0
Region sequenced: VP1	Gene length: 639
RT-PCR primers: O-1C244F/EUR-2B52R	Total no. of comparisons: 4277
O-1C272F/EUR-2B52R	Min. no. of nt for comparison: 600
	Total turn-around time: 64 days
	Sequencing time: 14 days
Comments:	

Most Closely Related Viruses									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	O/NEP/23/2015	NEP15-23	639	639	0	100.00	0.00	ME-SA	Ind-2001d
2	O/NEP/24/2015	NEP15-24	639	637	0	99.69	0.31	ME-SA	Ind-2001d
3	O/NEP/25/2015	NEP15-25	639	636	0	99.53	0.47	ME-SA	Ind-2001d
4	O/NEP/14/2015	NEP15-14	639	635	0	99.37	0.63	ME-SA	Ind-2001d
5	O/NEP/15/2015	NEP15-15	639	635	0	99.37	0.63	ME-SA	Ind-2001d
6	O/NEP/18/2015	NEP15-18	639	634	0	99.22	0.78	ME-SA	Ind-2001d
7	O/NEP/17/2015	NEP15-17	639	630	0	98.59	1.41	ME-SA	Ind-2001d
8	O/NEP/19/2015	NEP15-19	639	630	0	98.59	1.41	ME-SA	Ind-2001d
9	O/NEP/10/2015	NEP15-10	639	628	0	98.28	1.72	ME-SA	Ind-2001d
10	O/NEP/11/2015	NEP15-11	639	628	0	98.28	1.72	ME-SA	Ind-2001d
Most Closely Related Reference Viruses									
(see http://www.wrlfmd.org/fmd_genotyping/prototypes.htm)									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	O/BHU/3/2009 (KM921814)	BHU09-03	639	595	0	93.11	6.89	ME-SA	Ind-2001d
2	O/OMN/7/2001 (DQ164941)	OMN01-07	639	589	0	92.18	7.82	ME-SA	Ind-2001b
3	O/KUW/3/97 (DQ164904)	KUW97-03	639	581	0	90.92	9.08	ME-SA	Ind-2001a
4	O/UAE/4/2008 (KM921876)	UAE08-04	636	571	0	89.78	10.22	ME-SA	Ind-2001c
5	O/UKG/35/2001 (AJ539141)	UKG01-35	639	564	0	88.26	11.74	ME-SA	PanAsia
6	O1/Manisa/TUR/69 (AY593823)	TUR69--G	639	561	0	87.79	12.21	ME-SA	unnamed
7	O/IRN/31/2009	IRN09-31	639	560	0	87.64	12.36	ME-SA	PanAsia-2 ^{FAR-09}
8	O/IRN/8/2005	IRN05-08	639	558	0	87.32	12.68	ME-SA	PanAsia-2
9	O/PAK/16/2010	PAK10-16	639	558	0	87.32	12.68	ME-SA	PanAsia-2 ^{PUN-10}
10	O/IRN/18/2010	IRN10-18	639	557	0	87.17	12.83	ME-SA	PanAsia-2 ^{BAL-09}

nt, nucleotides

*, not a WRLFMD reference number

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Serotype: O	Report date: 23/03/2016
WRLFMD Ref No: NEP/23/2015	Reported by: N.J. Knowles
Batch No: WRLFMD/2016/00004	Checked by: K. Bachanek-Bankowska
Sender Ref: 2072/73(76)	
Location: Kathmandu, Nepal	Topotype: ME-SA
Date collected: 09/12/2015	Genotype/strain: Ind-2001d
Date received by WRLFMD: 19/01/2016	Sequence filename: NEP15-23.SEQ
Date received for sequencing: 18/03/2016	Date sequence last updated: 22/03/2016
Species: Cattle	No. of Nt determined: 639
Material used: BTy1 05/03/2016	No. of ambiguities: 0
Region sequenced: VP1	Gene length: 639
RT-PCR primers: O-1C244F/EUR-2B52R	Total no. of comparisons: 4277
O-1C272F/EUR-2B52R	Min. no. of nt for comparison: 600
	Total turn-around time: 64 days
	Sequencing time: 5 days
Comments:	

Most Closely Related Viruses									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	O/NEP/21/2015	NEP15-21	639	639	0	100.00	0.00	ME-SA	Ind-2001d
2	O/NEP/24/2015	NEP15-24	639	637	0	99.69	0.31	ME-SA	Ind-2001d
3	O/NEP/25/2015	NEP15-25	639	636	0	99.53	0.47	ME-SA	Ind-2001d
4	O/NEP/14/2015	NEP15-14	639	635	0	99.37	0.63	ME-SA	Ind-2001d
5	O/NEP/15/2015	NEP15-15	639	635	0	99.37	0.63	ME-SA	Ind-2001d
6	O/NEP/18/2015	NEP15-18	639	634	0	99.22	0.78	ME-SA	Ind-2001d
7	O/NEP/17/2015	NEP15-17	639	630	0	98.59	1.41	ME-SA	Ind-2001d
8	O/NEP/19/2015	NEP15-19	639	630	0	98.59	1.41	ME-SA	Ind-2001d
9	O/NEP/10/2015	NEP15-10	639	628	0	98.28	1.72	ME-SA	Ind-2001d
10	O/NEP/11/2015	NEP15-11	639	628	0	98.28	1.72	ME-SA	Ind-2001d
Most Closely Related Reference Viruses									
(see http://www.wrlfmd.org/fmd_genotyping/prototypes.htm)									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	O/BHU/3/2009 (KM921814)	BHU09-03	639	595	0	93.11	6.89	ME-SA	Ind-2001d
2	O/OMN/7/2001 (DQ164941)	OMN01-07	639	589	0	92.18	7.82	ME-SA	Ind-2001b
3	O/KUW/3/97 (DQ164904)	KUW97-03	639	581	0	90.92	9.08	ME-SA	Ind-2001a
4	O/UAE/4/2008 (KM921876)	UAE08-04	636	571	0	89.78	10.22	ME-SA	Ind-2001c
5	O/UKG/35/2001 (AJ539141)	UKG01-35	639	564	0	88.26	11.74	ME-SA	PanAsia
6	O1/Manisa/TUR/69 (AY593823)	TUR69--G	639	561	0	87.79	12.21	ME-SA	unnamed
7	O/IRN/31/2009	IRN09-31	639	560	0	87.64	12.36	ME-SA	PanAsia-2 ^{FAR-09}
8	O/IRN/8/2005	IRN05-08	639	558	0	87.32	12.68	ME-SA	PanAsia-2
9	O/PAK/16/2010	PAK10-16	639	558	0	87.32	12.68	ME-SA	PanAsia-2 ^{PUN-10}
10	O/IRN/18/2010	IRN10-18	639	557	0	87.17	12.83	ME-SA	PanAsia-2 ^{BAL-09}

nt, nucleotides

*, not a WRLFMD reference number

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Serotype: O	Report date: 23/03/2016
WRLFMD Ref No: NEP/24/2015	Reported by: N.J. Knowles
Batch No: WRLFMD/2016/00004	Checked by: K. Bachanek-Bankowska
Sender Ref: 2072/73(86)	
Location: Sunsari, Nepal	Topotype: ME-SA
Date collected: 11/12/2015	Genotype/strain: Ind-2001d
Date received by WRLFMD: 19/01/2016	Sequence filename: NEP15-24.SEQ
Date received for sequencing: 18/03/2016	Date sequence last updated: 22/03/2016
Species: Cattle	No. of Nt determined: 639
Material used: BTy1 05/03/2016	No. of ambiguities: 0
Region sequenced: VP1	Gene length: 639
RT-PCR primers: O-1C244F/EUR-2B52R	Total no. of comparisons: 4277
O-1C272F/EUR-2B52R	Min. no. of nt for comparison: 600
	Total turn-around time: 64 days
	Sequencing time: 5 days
Comments:	

Most Closely Related Viruses									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	O/NEP/21/2015	NEP15-21	639	637	0	99.69	0.31	ME-SA	Ind-2001d
2	O/NEP/23/2015	NEP15-23	639	637	0	99.69	0.31	ME-SA	Ind-2001d
3	O/NEP/25/2015	NEP15-25	639	636	0	99.53	0.47	ME-SA	Ind-2001d
4	O/NEP/14/2015	NEP15-14	639	635	0	99.37	0.63	ME-SA	Ind-2001d
5	O/NEP/15/2015	NEP15-15	639	635	0	99.37	0.63	ME-SA	Ind-2001d
6	O/NEP/18/2015	NEP15-18	639	634	0	99.22	0.78	ME-SA	Ind-2001d
7	O/NEP/17/2015	NEP15-17	639	630	0	98.59	1.41	ME-SA	Ind-2001d
8	O/NEP/19/2015	NEP15-19	639	630	0	98.59	1.41	ME-SA	Ind-2001d
9	O/NEP/10/2015	NEP15-10	639	628	0	98.28	1.72	ME-SA	Ind-2001d
10	O/NEP/11/2015	NEP15-11	639	628	0	98.28	1.72	ME-SA	Ind-2001d
Most Closely Related Reference Viruses									
(see http://www.wrlfmd.org/fmd_genotyping/prototypes.htm)									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	O/BHU/3/2009 (KM921814)	BHU09-03	639	597	0	93.43	6.57	ME-SA	Ind-2001d
2	O/OMN/7/2001 (DQ164941)	OMN01-07	639	591	0	92.49	7.51	ME-SA	Ind-2001b
3	O/KUW/3/97 (DQ164904)	KUW97-03	639	583	0	91.24	8.76	ME-SA	Ind-2001a
4	O/UAE/4/2008 (KM921876)	UAE08-04	636	571	0	89.78	10.22	ME-SA	Ind-2001c
5	O/UKG/35/2001 (AJ539141)	UKG01-35	639	566	0	88.58	11.42	ME-SA	PanAsia
6	O/IRN/31/2009	IRN09-31	639	562	0	87.95	12.05	ME-SA	PanAsia-2 ^{FAR-09}
7	O1/Manisa/TUR/69 (AY593823)	TUR69--G	639	561	0	87.79	12.21	ME-SA	unnamed
8	O/IRN/8/2005	IRN05-08	639	560	0	87.64	12.36	ME-SA	PanAsia-2
9	O/PAK/16/2010	PAK10-16	639	560	0	87.64	12.36	ME-SA	PanAsia-2 ^{PUN-10}
10	O/IRN/18/2010	IRN10-18	639	559	0	87.48	12.52	ME-SA	PanAsia-2 ^{BAL-09}

nt, nucleotides

*, not a WRLFMD reference number

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FAO World Reference Laboratory for FMD Genotyping Report

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Serotype: O	Report date: 23/03/2016
WRLFMD Ref No: NEP/25/2015	Reported by: N.J. Knowles
Batch No: WRLFMD/2016/00004	Checked by: K. Bachanek-Bankowska
Sender Ref: 2072/73(82)	
Location: Lalitpur, Nepal	Topotype: ME-SA
Date collected: 14/12/2015	Genotype/strain: Ind-2001d
Date received by WRLFMD: 19/01/2016	Sequence filename: NEP15-25.SEQ
Date received for sequencing: 09/03/2016	Date sequence last updated: 22/03/2016
Species: Cattle	No. of Nt determined: 639
Material used: BTy1 04/03/2016	No. of ambiguities: 0
Region sequenced: VP1	Gene length: 639
RT-PCR primers: O-1C244F/EUR-2B52R	Total no. of comparisons: 4277
O-1C272F/EUR-2B52R	Min. no. of nt for comparison: 600
	Total turn-around time: 64 days
	Sequencing time: 14 days
Comments:	

Most Closely Related Viruses									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	O/NEP/21/2015	NEP15-21	639	636	0	99.53	0.47	ME-SA	Ind-2001d
2	O/NEP/23/2015	NEP15-23	639	636	0	99.53	0.47	ME-SA	Ind-2001d
3	O/NEP/24/2015	NEP15-24	639	636	0	99.53	0.47	ME-SA	Ind-2001d
4	O/NEP/14/2015	NEP15-14	639	634	0	99.22	0.78	ME-SA	Ind-2001d
5	O/NEP/15/2015	NEP15-15	639	634	0	99.22	0.78	ME-SA	Ind-2001d
6	O/NEP/18/2015	NEP15-18	639	633	0	99.06	0.94	ME-SA	Ind-2001d
7	O/NEP/17/2015	NEP15-17	639	629	0	98.44	1.56	ME-SA	Ind-2001d
8	O/NEP/19/2015	NEP15-19	639	629	0	98.44	1.56	ME-SA	Ind-2001d
9	O/NEP/10/2015	NEP15-10	639	627	0	98.12	1.88	ME-SA	Ind-2001d
10	O/NEP/11/2015	NEP15-11	639	627	0	98.12	1.88	ME-SA	Ind-2001d
Most Closely Related Reference Viruses									
(see http://www.wrlfmd.org/fmd_genotyping/prototypes.htm)									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	O/BHU/3/2009 (KM921814)	BHU09-03	639	595	0	93.11	6.89	ME-SA	Ind-2001d
2	O/OMN/7/2001 (DQ164941)	OMN01-07	639	589	0	92.18	7.82	ME-SA	Ind-2001b
3	O/KUW/3/97 (DQ164904)	KUW97-03	639	581	0	90.92	9.08	ME-SA	Ind-2001a
4	O/UAE/4/2008 (KM921876)	UAE08-04	636	569	0	89.47	10.53	ME-SA	Ind-2001c
5	O/UKG/35/2001 (AJ539141)	UKG01-35	639	564	0	88.26	11.74	ME-SA	PanAsia
6	O1/Manisa/TUR/69 (AY593823)	TUR69--G	639	561	0	87.79	12.21	ME-SA	unnamed
7	O/IRN/31/2009	IRN09-31	639	560	0	87.64	12.36	ME-SA	PanAsia-2 ^{FAR-09}
8	O/IRN/8/2005	IRN05-08	639	558	0	87.32	12.68	ME-SA	PanAsia-2
9	O/IRN/18/2010	IRN10-18	639	557	0	87.17	12.83	ME-SA	PanAsia-2 ^{BAL-09}
10	O/PAK/16/2010	PAK10-16	639	557	0	87.17	12.83	ME-SA	PanAsia-2 ^{PUN-10}

nt, nucleotides

*, not a WRLFMD reference number

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Report on FMDV O in Nepal in 2015

Batch: WRLFMD/2016/00004

◆ indicates viruses in this batch

Software: MEGA 6.06
 Analysis ----- Phylogeny Reconstruction
 Scope ----- All Selected Taxa
 Statistical Method ----- Neighbor-joining
 Phylogeny Test
 Test of Phylogeny ----- Bootstrap method
 No. of Bootstrap Replications ----- 1000
 Substitution Model
 Substitutions Type ----- Nucleotide
 Model/Method ----- Kimura 2-parameter model
 Substitutions to Include ----- d: Transitions + Transversions
 Rates and Patterns
 Rates among Sites ----- Uniform rates
 Pattern among Lineages ----- Same (Homogeneous)
 Data Subset to Use
 Gaps/Missing Data Treatment ----- Pairwise deletion
 Codons Included ----- 1st+2nd+3rd+Non-Coding
 No. of Sites : 642
 No Of Bootstrap Reps = 1000
 Only bootstrap values of 70% and above are shown

*, not a WRLFMD Ref. No.

N.J. Knowles, J. Wadsworth & K. Bachanek-Bankowska,
 23 March 2016

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† proposed new sublineage designation
 (derived from KATmandu)

