

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

Genotyping Report (supplementary)

Report Date for this Batch: 24 January 2014

FMDV type O

Country: Libya

Period: 2013

No. of samples: 4*

(these 4 samples were originally reported as FMDV-GD)

BATCH: WRLFMD/2013/00030

*, this batch of samples was submitted via [REDACTED], Istituto Zooprofilattico Sperimentale della Lombardia e dell'Emilia Romagna (IZSLER), Brescia, Italy.



This is a supplementary genotyping report on WRLFMD/2013/00030 O Libya 2013 comprising four samples originally reported as FMDV-GD. These have now been amplified with FMDV O primer sets and the complete VPI sequences determined.



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FAO World Reference Laboratory for FMD Genotyping Report

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Serotype: O	Report date: 24/01/2014
WRLFMD Ref No: LIB/11/2013	Reported by: N.J. Knowles
Batch No: WRLFMD/2013/00030	Checked by: K. Bachanek-Bankowska
Sender Ref: K1	
Location: not given, Libya	Topotype: ME-SA
Date collected: 12/09/2013	Genotype/strain: Ind-2001 ^{KAR-13}
Date received by WRLFMD: 16/12/2013	Sequence filename: LIB13-11.SEQ
Date received for sequencing: 20/01/2014	Date sequence last updated: 24/01/2014
Species: Cattle	No. of Nt determined: 639
Material used: epithelial suspension	No. of ambiguities: 0
Region sequenced: VP1	Gene length: 639
RT-PCR primers: O-1C244F/EUR-2B52R	Total no. of comparisons: 3757
O-1C272F/EUR-2B52R	Min. no. of nt for comparison: 600
	Total turn-around time: 39 days
	Sequencing time: 4 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/LIB/1/2013	LIB13-01	639	639	0	100.00	0.00	ME-SA	Ind-2001 ^{KAR-13}
2	O/LIB/12/2013	LIB13-12	639	639	0	100.00	0.00	ME-SA	Ind-2001 ^{KAR-13}
3	O/LIB/4/2013	LIB13-04	639	639	0	100.00	0.00	ME-SA	Ind-2001 ^{KAR-13}
4	O/LIB/5/2013	LIB13-05	639	639	0	100.00	0.00	ME-SA	Ind-2001 ^{KAR-13}
5	O/LIB/7/2013	LIB13-07	639	639	0	100.00	0.00	ME-SA	Ind-2001 ^{KAR-13}
6	O/LIB/13/2013	LIB13-13	639	638	0	99.84	0.16	ME-SA	Ind-2001 ^{KAR-13}
7	O/LIB/16/2013	LIB13-16	639	638	0	99.84	0.16	ME-SA	Ind-2001 ^{KAR-13}
8	O/LIB/17/2013	LIB13-17	639	638	0	99.84	0.16	ME-SA	Ind-2001 ^{KAR-13}
9	O/LIB/2/2013	LIB13-02	639	638	0	99.84	0.16	ME-SA	Ind-2001 ^{KAR-13}
10	O/LIB/22/2013	LIB13-22	639	638	0	99.84	0.16	ME-SA	Ind-2001 ^{KAR-13}
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/1/2013	BHU13-01	639	620	0	97.03	2.97	ME-SA	Ind-2001 ^{KAR-13}
2	O/BHU/3/2009	BHU09-03	639	615	0	96.24	3.76	ME-SA	Ind-2001d
3	O/OMN/7/2001 (DQ164941)	OMN01-07	639	586	0	91.71	8.29	ME-SA	Ind-2001b
4	O/KUW/3/97 (DQ164904)	KUW97-03	639	583	0	91.24	8.76	ME-SA	Ind-2001a
5	O/IRN/31/2009	IRN09-31	639	576	0	90.14	9.86	ME-SA	PanAsia-2 ^{FAR-09}
6	O/UAE/4/2008	UAE08-04	636	573	0	90.09	9.91	ME-SA	Ind-2001c
7	O/TUR/257/2008* (FMDI)	TUR08-AD	639	571	0	89.36	10.64	ME-SA	PanAsia-2 ^{TER-08}
8	O/IRN/8/2005	IRN05-08	639	570	0	89.20	10.80	ME-SA	PanAsia-2
9	O/PAK/16/2010	PAK10-16	639	569	0	89.05	10.95	ME-SA	PanAsia-2 ^{PUN-10}
10	O/UKG/35/2001 (AJ539141)	UKG01-35	639	569	0	89.05	10.95	ME-SA	PanAsia

nt, nucleotides

*, not a WRLFMD reference number

Assembled with Report Generator v4.1

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Serotype: O	Report date: 24/01/2014
WRLFMD Ref No: LIB/12/2013	Reported by: N.J. Knowles
Batch No: WRLFMD/2013/00030	Checked by: K. Bachanek-Bankowska
Sender Ref: K2	
Location: not given, Libya	Topotype: ME-SA
Date collected: 12/09/2013	Genotype/strain: Ind-2001 ^{KAR-13}
Date received by WRLFMD: 16/12/2013	Sequence filename: LIB13-12.SEQ
Date received for sequencing: 20/01/2014	Date sequence last updated: 24/01/2014
Species: Cattle	No. of Nt determined: 639
Material used: epithelial suspension	No. of ambiguities: 0
Region sequenced: VP1	Gene length: 639
RT-PCR primers: O-1C244F/EUR-2B52R	Total no. of comparisons: 3757
O-1C272F/EUR-2B52R	Min. no. of nt for comparison: 600
	Total turn-around time: 39 days
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Comments:	

Most Closely Related Viruses									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	O/LIB/1/2013	LIB13-01	639	639	0	100.00	0.00	ME-SA	Ind-2001 ^{KAR-13}
2	O/LIB/11/2013	LIB13-11	639	639	0	100.00	0.00	ME-SA	Ind-2001 ^{KAR-13}
3	O/LIB/4/2013	LIB13-04	639	639	0	100.00	0.00	ME-SA	Ind-2001 ^{KAR-13}
4	O/LIB/5/2013	LIB13-05	639	639	0	100.00	0.00	ME-SA	Ind-2001 ^{KAR-13}
5	O/LIB/7/2013	LIB13-07	639	639	0	100.00	0.00	ME-SA	Ind-2001 ^{KAR-13}
6	O/LIB/13/2013	LIB13-13	639	638	0	99.84	0.16	ME-SA	Ind-2001 ^{KAR-13}
7	O/LIB/16/2013	LIB13-16	639	638	0	99.84	0.16	ME-SA	Ind-2001 ^{KAR-13}
8	O/LIB/17/2013	LIB13-17	639	638	0	99.84	0.16	ME-SA	Ind-2001 ^{KAR-13}
9	O/LIB/2/2013	LIB13-02	639	638	0	99.84	0.16	ME-SA	Ind-2001 ^{KAR-13}
10	O/LIB/22/2013	LIB13-22	639	638	0	99.84	0.16	ME-SA	Ind-2001 ^{KAR-13}
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5	O/IRN/31/2009	IRN09-31	639	576	0	90.14	9.86	ME-SA	PanAsia-2 ^{FAR-09}
6	O/UAE/4/2008	UAE08-04	636	573	0	90.09	9.91	ME-SA	Ind-2001c
7	O/TUR/257/2008* (FMDI)	TUR08-AD	639	571	0	89.36	10.64	ME-SA	PanAsia-2 ^{TER-08}
8	O/IRN/8/2005	IRN05-08	639	570	0	89.20	10.80	ME-SA	PanAsia-2
9	O/PAK/16/2010	PAK10-16	639	569	0	89.05	10.95	ME-SA	PanAsia-2 ^{PUN-10}
10	O/UKG/35/2001 (AJ539141)	UKG01-35	639	569	0	89.05	10.95	ME-SA	PanAsia

nt, nucleotides

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Serotype: O	Report date: 24/01/2014
WRLFMD Ref No: LIB/13/2013	Reported by: N.J. Knowles
Batch No: WRLFMD/2013/00030	Checked by: K. Bachanek-Bankowska
Sender Ref: M	
Location: not given, Libya	Topotype: ME-SA
Date collected: 14/09/2013	Genotype/strain: Ind-2001 ^{KAR-13}
Date received by WRLFMD: 16/12/2013	Sequence filename: LIB13-13.SEQ
Date received for sequencing: 20/01/2014	Date sequence last updated: 24/01/2014
Species: Cattle	No. of Nt determined: 639
Material used: epithelial suspension	No. of ambiguities: 0
Region sequenced: VP1	Gene length: 639
RT-PCR primers: O-1C244F/EUR-2B52R	Total no. of comparisons: 3757
O-1C272F/EUR-2B52R	Min. no. of nt for comparison: 600
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2	O/LIB/11/2013	LIB13-11	639	638	0	99.84	0.16	ME-SA	Ind-2001 ^{KAR-13}
3	O/LIB/12/2013	LIB13-12	639	638	0	99.84	0.16	ME-SA	Ind-2001 ^{KAR-13}
4	O/LIB/4/2013	LIB13-04	639	638	0	99.84	0.16	ME-SA	Ind-2001 ^{KAR-13}
5	O/LIB/5/2013	LIB13-05	639	638	0	99.84	0.16	ME-SA	Ind-2001 ^{KAR-13}
6	O/LIB/7/2013	LIB13-07	639	638	0	99.84	0.16	ME-SA	Ind-2001 ^{KAR-13}
7	O/LIB/16/2013	LIB13-16	639	637	0	99.69	0.31	ME-SA	Ind-2001 ^{KAR-13}
8	O/LIB/17/2013	LIB13-17	639	637	0	99.69	0.31	ME-SA	Ind-2001 ^{KAR-13}
9	O/LIB/2/2013	LIB13-02	639	637	0	99.69	0.31	ME-SA	Ind-2001 ^{KAR-13}
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Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	O/BHU/1/2013	BHU13-01	639	619	0	96.87	3.13	ME-SA	Ind-2001 ^{KAR-13}
2	O/BHU/3/2009	BHU09-03	639	614	0	96.09	3.91	ME-SA	Ind-2001d
3	O/OMN/7/2001 (DQ164941)	OMN01-07	639	585	0	91.55	8.45	ME-SA	Ind-2001b
4	O/KUW/3/97 (DQ164904)	KUW97-03	639	582	0	91.08	8.92	ME-SA	Ind-2001a
5	O/IRN/31/2009	IRN09-31	639	575	0	89.98	10.02	ME-SA	PanAsia-2 ^{FAR-09}
6	O/UAE/4/2008	UAE08-04	636	572	0	89.94	10.06	ME-SA	Ind-2001c
7	O/TUR/257/2008* (FMDI)	TUR08-AD	639	570	0	89.20	10.80	ME-SA	PanAsia-2 ^{TER-08}
8	O/IRN/8/2005	IRN05-08	639	569	0	89.05	10.95	ME-SA	PanAsia-2
9	O/PAK/16/2010	PAK10-16	639	568	0	88.89	11.11	ME-SA	PanAsia-2 ^{PUN-10}
10	O/UKG/35/2001 (AJ539141)	UKG01-35	639	568	0	88.89	11.11	ME-SA	PanAsia

nt, nucleotides

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Serotype: O	Report date: 24/01/2014
WRLFMD Ref No: LIB/16/2013	Reported by: N.J. Knowles
Batch No: WRLFMD/2013/00030	Checked by: K. Bachanek-Bankowska
Sender Ref: R	
Location: not given, Libya	Topotype: ME-SA
Date collected: 30/09/2013	Genotype/strain: Ind-2001 ^{KAR-13}
Date received by WRLFMD: 16/12/2013	Sequence filename: LIB13-16.SEQ
Date received for sequencing: 20/01/2014	Date sequence last updated: 24/01/2014
Species: Cattle	No. of Nt determined: 639
Material used: epithelial suspension	No. of ambiguities: 0
Region sequenced: VP1	Gene length: 639
RT-PCR primers: O-1C244F/EUR-2B52R	Total no. of comparisons: 3757
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2	O/LIB/11/2013	LIB13-11	639	638	0	99.84	0.16	ME-SA	Ind-2001 ^{KAR-13}
3	O/LIB/12/2013	LIB13-12	639	638	0	99.84	0.16	ME-SA	Ind-2001 ^{KAR-13}
4	O/LIB/4/2013	LIB13-04	639	638	0	99.84	0.16	ME-SA	Ind-2001 ^{KAR-13}
5	O/LIB/5/2013	LIB13-05	639	638	0	99.84	0.16	ME-SA	Ind-2001 ^{KAR-13}
6	O/LIB/7/2013	LIB13-07	639	638	0	99.84	0.16	ME-SA	Ind-2001 ^{KAR-13}
7	O/LIB/13/2013	LIB13-13	639	637	0	99.69	0.31	ME-SA	Ind-2001 ^{KAR-13}
8	O/LIB/17/2013	LIB13-17	639	637	0	99.69	0.31	ME-SA	Ind-2001 ^{KAR-13}
9	O/LIB/2/2013	LIB13-02	639	637	0	99.69	0.31	ME-SA	Ind-2001 ^{KAR-13}
10	O/LIB/22/2013	LIB13-22	639	637	0	99.69	0.31	ME-SA	Ind-2001 ^{KAR-13}
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(see http://www.wrlfmd.org/fmd_genotyping/prototypes.htm)									
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1	O/BHU/1/2013	BHU13-01	639	621	0	97.18	2.82	ME-SA	Ind-2001 ^{KAR-13}
2	O/BHU/3/2009	BHU09-03	639	616	0	96.40	3.60	ME-SA	Ind-2001d
3	O/OMN/7/2001 (DQ164941)	OMN01-07	639	587	0	91.86	8.14	ME-SA	Ind-2001b
4	O/KUW/3/97 (DQ164904)	KUW97-03	639	584	0	91.39	8.61	ME-SA	Ind-2001a
5	O/UAE/4/2008	UAE08-04	636	574	0	90.25	9.75	ME-SA	Ind-2001c
6	O/IRN/31/2009	IRN09-31	639	575	0	89.98	10.02	ME-SA	PanAsia-2 ^{FAR-09}
7	O/TUR/257/2008* (FMDI)	TUR08-AD	639	570	0	89.20	10.80	ME-SA	PanAsia-2 ^{TER-08}
8	O/IRN/8/2005	IRN05-08	639	569	0	89.05	10.95	ME-SA	PanAsia-2
9	O/PAK/16/2010	PAK10-16	639	568	0	88.89	11.11	ME-SA	PanAsia-2 ^{PUN-10}
10	O/UKG/35/2001 (AJ539141)	UKG01-35	639	568	0	88.89	11.11	ME-SA	PanAsia

nt, nucleotides

*, not a WRLFMD reference number

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Report on FMDV O in Libya in 2013

Batch: WRLFMD/2014/00030

- ◆ indicates viruses in this report
- ◆ indicates other viruses in this batch (previously reported)

Software: MEGA 5.2

Analysis

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,
 24 January 2014

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