

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

## Genotyping Report

FMDV serotype: O  
Country: Bhutan  
Year: 2018, 2019  
Batch: WRLFMD/2019/00013  
No. of sequences: 21  
Report date: 15th April 2019  
Report generated by: Nick Knowles  
Report checked by: Jemma Wadsworth



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Virus sample name:	BHU/5/2018
Sender reference:	1064
Location of origin:	Drangzha Gonpa Luni, Paro, RLDC, Tshimasham, Western
Country of origin:	Bhutan
Date of collection:	09/05/2018
Host species:	cattle
Serotype:	O
Topotype:	ME-SA
Lineage:	Ind-2001
Sublineage:	e
Sequence length:	633
Ambiguities:	0
Material submitted for sequencing:	BTy1
Harvest date of material:	28/03/2019
Primers:	O-1C244F/EUR-2B52R; FMD-3161F/FMD-4303R
Received for sequencing:	11/04/2019
Created:	15/04/2019
Last updated:	15/04/2019

VIBASys IDs: sample 41235, genome 41236, sequence viba\_41237, sequencing info 41238

#### Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_36750	BHU/2/2018	cattle	99.7	0	O	ME-SA	Ind-2001	e
viba_36754	BHU/3/2018	cattle	99.7	0	O	ME-SA	Ind-2001	e
viba_41261	BHU/18/2018	cattle	99.7	0	O	ME-SA	Ind-2001	e
viba_41257	BHU/16/2018	cattle	99.7	0	O	ME-SA	Ind-2001	e
viba_41245	BHU/8/2018	cattle	99.4	0	O	ME-SA	Ind-2001	e
viba_41249	BHU/9/2018	goat	99.4	0	O	ME-SA	Ind-2001	e
viba_41277	BHU/27/2018	cattle	99.4	0	O	ME-SA	Ind-2001	e
viba_41273	BHU/25/2018	cattle	99.4	0	O	ME-SA	Ind-2001	e
viba_41269	BHU/24/2018	cattle	99.4	0	O	ME-SA	Ind-2001	e
viba_41253	BHU/12/2018	cattle	99.4	0	O	ME-SA	Ind-2001	e

#### Most Closely Related Prototype Sequences

see [http://www.wrlfmd.org/fmd\\_genotyping/prototypes.htm](http://www.wrlfmd.org/fmd_genotyping/prototypes.htm)

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_30238	MUR/19/2016	cattle	97.8	0	O	ME-SA	Ind-2001	e
viba_293	BHU/3/2009	cattle	94.0	0	O	ME-SA	Ind-2001	d
viba_541	OMN/7/2001	bovine	92.4	0	O	ME-SA	Ind-2001	b
viba_705	KUW/3/97	bovine	91.5	0	O	ME-SA	Ind-2001	a
viba_397	UAE/4/2008	gazelle	90.4	0	O	ME-SA	Ind-2001	c
viba_285	UKG/35/2001	porcine	88.6	0	O	ME-SA	PanAsia	
viba_766	IRN/31/2009	cattle	88.5	0	O	ME-SA	PanAsia-2	FAR-09
viba_359	Manisa/TUR/69		88.2	0	O	ME-SA		
viba_719	IRN/88/2009		88.0	0	O	ME-SA	PanAsia-2	ANT-10
viba_617	IND/53/79	bovine	87.7	0	O	ME-SA		

Virus sample name:	BHU/6/2018
Sender reference:	41-1
Location of origin:	Gomtu Town Area, Samtse, RLDC, Tshimasham, Western
Country of origin:	Bhutan
Date of collection:	11/07/2018
Host species:	cattle
Serotype:	O
Topotype:	ME-SA
Lineage:	Ind-2001
Sublineage:	e
Sequence length:	633
Ambiguities:	0
Material submitted for sequencing:	BTy1
Harvest date of material:	03/04/2019
Primers:	O-1C244F/EUR-2B52R; FMD-3161F/FMD-4303R
Received for sequencing:	11/04/2019
Created:	15/04/2019
Last updated:	15/04/2019
VIBASys IDs: sample 41239, genome 41240, sequence viba_41241, sequencing info 41242	

#### Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_41249	BHU/9/2018	goat	100.0	0	O	ME-SA	Ind-2001	e
viba_36750	BHU/2/2018	cattle	99.7	0	O	ME-SA	Ind-2001	e
viba_36754	BHU/3/2018	cattle	99.7	0	O	ME-SA	Ind-2001	e
viba_41289	BHU/3/2019	cattle	99.4	0	O	ME-SA	Ind-2001	e
viba_41245	BHU/8/2018	cattle	99.4	0	O	ME-SA	Ind-2001	e
viba_41285	BHU/2/2019	cattle	99.4	0	O	ME-SA	Ind-2001	e
viba_41237	BHU/5/2018	cattle	99.4	0	O	ME-SA	Ind-2001	e
viba_41281	BHU/1/2019	cattle	99.4	0	O	ME-SA	Ind-2001	e
viba_41253	BHU/12/2018	cattle	99.4	0	O	ME-SA	Ind-2001	e
viba_41309	BHU/8/2019	cattle	99.4	0	O	ME-SA	Ind-2001	e

#### Most Closely Related Prototype Sequences

see [http://www.wrlfmd.org/fmd\\_genotyping/prototypes.htm](http://www.wrlfmd.org/fmd_genotyping/prototypes.htm)

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_30238	MUR/19/2016	cattle	97.8	0	O	ME-SA	Ind-2001	e
viba_293	BHU/3/2009	cattle	93.7	0	O	ME-SA	Ind-2001	d
viba_541	OMN/7/2001	bovine	92.3	0	O	ME-SA	Ind-2001	b
viba_705	KUW/3/97	bovine	91.0	0	O	ME-SA	Ind-2001	a
viba_397	UAE/4/2008	gazelle	89.9	0	O	ME-SA	Ind-2001	c
viba_766	IRN/31/2009	cattle	88.9	0	O	ME-SA	PanAsia-2	FAR-09
viba_285	UKG/35/2001	porcine	88.8	0	O	ME-SA	PanAsia	
viba_719	IRN/88/2009		88.5	0	O	ME-SA	PanAsia-2	ANT-10
viba_359	Manisa/TUR/69		88.2	0	O	ME-SA		
viba_860	IRN/6/2015	cattle	88.1	0	O	ME-SA	PanAsia-2	QOM-15

Virus sample name:	BHU/8/2018
Sender reference:	22
Location of origin:	Samtenling, Thimphu, RLDC, Tshimasham, Western
Country of origin:	Bhutan
Date of collection:	12/07/2018
Host species:	cattle
Serotype:	O
Topotype:	ME-SA
Lineage:	Ind-2001
Sublineage:	e
Sequence length:	633
Ambiguities:	0
Material submitted for sequencing:	BTy1
Harvest date of material:	02/04/2019
Primers:	O-1C244F/EUR-2B52R; FMD-3161F/FMD-4303R
Received for sequencing:	11/04/2019
Created:	15/04/2019
Last updated:	15/04/2019
VIBASys IDs: sample 41243, genome 41244, sequence viba_41245, sequencing info 41246	

#### Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_41253	BHU/12/2018	cattle	100.0	0	O	ME-SA	Ind-2001	e
viba_36750	BHU/2/2018	cattle	99.7	0	O	ME-SA	Ind-2001	e
viba_36754	BHU/3/2018	cattle	99.7	0	O	ME-SA	Ind-2001	e
viba_41249	BHU/9/2018	goat	99.4	0	O	ME-SA	Ind-2001	e
viba_41237	BHU/5/2018	cattle	99.4	0	O	ME-SA	Ind-2001	e
viba_41261	BHU/18/2018	cattle	99.4	0	O	ME-SA	Ind-2001	e
viba_41257	BHU/16/2018	cattle	99.4	0	O	ME-SA	Ind-2001	e
viba_41241	BHU/6/2018	cattle	99.4	0	O	ME-SA	Ind-2001	e
viba_41277	BHU/27/2018	cattle	99.1	0	O	ME-SA	Ind-2001	e
viba_41273	BHU/25/2018	cattle	99.1	0	O	ME-SA	Ind-2001	e

#### Most Closely Related Prototype Sequences

see [http://www.wrlfmd.org/fmd\\_genotyping/prototypes.htm](http://www.wrlfmd.org/fmd_genotyping/prototypes.htm)

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_30238	MUR/19/2016	cattle	97.8	0	O	ME-SA	Ind-2001	e
viba_293	BHU/3/2009	cattle	94.0	0	O	ME-SA	Ind-2001	d
viba_541	OMN/7/2001	bovine	92.6	0	O	ME-SA	Ind-2001	b
viba_705	KUW/3/97	bovine	91.4	0	O	ME-SA	Ind-2001	a
viba_397	UAE/4/2008	gazelle	90.3	0	O	ME-SA	Ind-2001	c
viba_766	IRN/31/2009	cattle	88.6	0	O	ME-SA	PanAsia-2	FAR-09
viba_285	UKG/35/2001	porcine	88.5	0	O	ME-SA	PanAsia	
viba_359	Manisa/TUR/69		88.2	0	O	ME-SA		
viba_719	IRN/88/2009		88.2	0	O	ME-SA	PanAsia-2	ANT-10
viba_617	IND/53/79	bovine	87.8	0	O	ME-SA		

Virus sample name:	BHU/9/2018
Sender reference:	41-3
Location of origin:	Gomtu Town Area, Samtse, RLDC, Tshimasham, Western
Country of origin:	Bhutan
Date of collection:	12/07/2018
Host species:	goat
Serotype:	O
Topotype:	ME-SA
Lineage:	Ind-2001
Sublineage:	e
Sequence length:	633
Ambiguities:	0
Material submitted for sequencing:	BTy1
Harvest date of material:	30/03/2019
Primers:	O-1C244F/EUR-2B52R; FMD-3161F/FMD-4303R
Received for sequencing:	11/04/2019
Created:	15/04/2019
Last updated:	15/04/2019
VIBASys IDs: sample 41247, genome 41248, sequence viba_41249, sequencing info 41250	

#### Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_41241	BHU/6/2018	cattle	100.0	0	O	ME-SA	Ind-2001	e
viba_36750	BHU/2/2018	cattle	99.7	0	O	ME-SA	Ind-2001	e
viba_36754	BHU/3/2018	cattle	99.7	0	O	ME-SA	Ind-2001	e
viba_41289	BHU/3/2019	cattle	99.4	0	O	ME-SA	Ind-2001	e
viba_41245	BHU/8/2018	cattle	99.4	0	O	ME-SA	Ind-2001	e
viba_41285	BHU/2/2019	cattle	99.4	0	O	ME-SA	Ind-2001	e
viba_41237	BHU/5/2018	cattle	99.4	0	O	ME-SA	Ind-2001	e
viba_41281	BHU/1/2019	cattle	99.4	0	O	ME-SA	Ind-2001	e
viba_41253	BHU/12/2018	cattle	99.4	0	O	ME-SA	Ind-2001	e
viba_41309	BHU/8/2019	cattle	99.4	0	O	ME-SA	Ind-2001	e

#### Most Closely Related Prototype Sequences

see [http://www.wrlfmd.org/fmd\\_genotyping/prototypes.htm](http://www.wrlfmd.org/fmd_genotyping/prototypes.htm)

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_30238	MUR/19/2016	cattle	97.8	0	O	ME-SA	Ind-2001	e
viba_293	BHU/3/2009	cattle	93.7	0	O	ME-SA	Ind-2001	d
viba_541	OMN/7/2001	bovine	92.3	0	O	ME-SA	Ind-2001	b
viba_705	KUW/3/97	bovine	91.0	0	O	ME-SA	Ind-2001	a
viba_397	UAE/4/2008	gazelle	89.9	0	O	ME-SA	Ind-2001	c
viba_766	IRN/31/2009	cattle	88.9	0	O	ME-SA	PanAsia-2	FAR-09
viba_285	UKG/35/2001	porcine	88.8	0	O	ME-SA	PanAsia	
viba_719	IRN/88/2009		88.5	0	O	ME-SA	PanAsia-2	ANT-10
viba_359	Manisa/TUR/69		88.2	0	O	ME-SA		
viba_860	IRN/6/2015	cattle	88.1	0	O	ME-SA	PanAsia-2	QOM-15

Virus sample name:	BHU/12/2018
Sender reference:	77
Location of origin:	Taba, Thimthrom, Thimphu, RLDC, Tshimasham, Western
Country of origin:	Bhutan
Date of collection:	09/08/2018
Host species:	cattle
Serotype:	O
Topotype:	ME-SA
Lineage:	Ind-2001
Sublineage:	e
Sequence length:	633
Ambiguities:	0
Material submitted for sequencing:	BTy1
Harvest date of material:	28/03/2019
Primers:	O-1C244F/EUR-2B52R; FMD-3161F/FMD-4303R
Received for sequencing:	11/04/2019
Created:	15/04/2019
Last updated:	15/04/2019
VIBASys IDs: sample 41251, genome 41252, sequence viba_41253, sequencing info 41254	

#### Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_41245	BHU/8/2018	cattle	100.0	0	O	ME-SA	Ind-2001	e
viba_36750	BHU/2/2018	cattle	99.7	0	O	ME-SA	Ind-2001	e
viba_36754	BHU/3/2018	cattle	99.7	0	O	ME-SA	Ind-2001	e
viba_41249	BHU/9/2018	goat	99.4	0	O	ME-SA	Ind-2001	e
viba_41237	BHU/5/2018	cattle	99.4	0	O	ME-SA	Ind-2001	e
viba_41261	BHU/18/2018	cattle	99.4	0	O	ME-SA	Ind-2001	e
viba_41257	BHU/16/2018	cattle	99.4	0	O	ME-SA	Ind-2001	e
viba_41241	BHU/6/2018	cattle	99.4	0	O	ME-SA	Ind-2001	e
viba_41277	BHU/27/2018	cattle	99.1	0	O	ME-SA	Ind-2001	e
viba_41273	BHU/25/2018	cattle	99.1	0	O	ME-SA	Ind-2001	e

#### Most Closely Related Prototype Sequences

see [http://www.wrlfmd.org/fmd\\_genotyping/prototypes.htm](http://www.wrlfmd.org/fmd_genotyping/prototypes.htm)

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_30238	MUR/19/2016	cattle	97.8	0	O	ME-SA	Ind-2001	e
viba_293	BHU/3/2009	cattle	94.0	0	O	ME-SA	Ind-2001	d
viba_541	OMN/7/2001	bovine	92.6	0	O	ME-SA	Ind-2001	b
viba_705	KUW/3/97	bovine	91.4	0	O	ME-SA	Ind-2001	a
viba_397	UAE/4/2008	gazelle	90.3	0	O	ME-SA	Ind-2001	c
viba_766	IRN/31/2009	cattle	88.6	0	O	ME-SA	PanAsia-2	FAR-09
viba_285	UKG/35/2001	porcine	88.5	0	O	ME-SA	PanAsia	
viba_359	Manisa/TUR/69		88.2	0	O	ME-SA		
viba_719	IRN/88/2009		88.2	0	O	ME-SA	PanAsia-2	ANT-10
viba_617	IND/53/79	bovine	87.8	0	O	ME-SA		

Virus sample name:	BHU/16/2018
Sender reference:	177-3
Location of origin:	Tshogonpa,Lumang, Trashigang, RLDC, Trahigang, Eastern
Country of origin:	Bhutan
Date of collection:	03/09/2018
Host species:	cattle
Serotype:	O
Topotype:	ME-SA
Lineage:	Ind-2001
Sublineage:	e
Sequence length:	633
Ambiguities:	0
Material submitted for sequencing:	BTy1
Harvest date of material:	03/04/2019
Primers:	O-1C244F/EUR-2B52R; FMD-3161F/FMD-4303R
Received for sequencing:	11/04/2019
Created:	15/04/2019
Last updated:	15/04/2019

VIBASys IDs: sample 41255, genome 41256, sequence viba\_41257, sequencing info 41258

#### Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_41261	BHU/18/2018	cattle	100.0	0	O	ME-SA	Ind-2001	e
viba_36750	BHU/2/2018	cattle	99.7	0	O	ME-SA	Ind-2001	e
viba_41237	BHU/5/2018	cattle	99.7	0	O	ME-SA	Ind-2001	e
viba_36754	BHU/3/2018	cattle	99.7	0	O	ME-SA	Ind-2001	e
viba_41245	BHU/8/2018	cattle	99.4	0	O	ME-SA	Ind-2001	e
viba_41249	BHU/9/2018	goat	99.4	0	O	ME-SA	Ind-2001	e
viba_41277	BHU/27/2018	cattle	99.4	0	O	ME-SA	Ind-2001	e
viba_41273	BHU/25/2018	cattle	99.4	0	O	ME-SA	Ind-2001	e
viba_41269	BHU/24/2018	cattle	99.4	0	O	ME-SA	Ind-2001	e
viba_41253	BHU/12/2018	cattle	99.4	0	O	ME-SA	Ind-2001	e

#### Most Closely Related Prototype Sequences

see [http://www.wrlfmd.org/fmd\\_genotyping/prototypes.htm](http://www.wrlfmd.org/fmd_genotyping/prototypes.htm)

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_30238	MUR/19/2016	cattle	97.8	0	O	ME-SA	Ind-2001	e
viba_293	BHU/3/2009	cattle	94.0	0	O	ME-SA	Ind-2001	d
viba_541	OMN/7/2001	bovine	92.7	0	O	ME-SA	Ind-2001	b
viba_705	KUW/3/97	bovine	91.8	0	O	ME-SA	Ind-2001	a
viba_397	UAE/4/2008	gazelle	90.7	0	O	ME-SA	Ind-2001	c
viba_285	UKG/35/2001	porcine	88.9	0	O	ME-SA	PanAsia	
viba_766	IRN/31/2009	cattle	88.8	0	O	ME-SA	PanAsia-2	FAR-09
viba_359	Manisa/TUR/69		88.5	0	O	ME-SA		
viba_617	IND/53/79	bovine	88.0	0	O	ME-SA		
viba_719	IRN/88/2009		88.0	0	O	ME-SA	PanAsia-2	ANT-10

Virus sample name:	BHU/18/2018
Sender reference:	178-7
Location of origin:	Tshogonpa,Lumang, Trashigang, RLDC, Trahigang, Eastern
Country of origin:	Bhutan
Date of collection:	03/09/2018
Host species:	cattle
Serotype:	O
Topotype:	ME-SA
Lineage:	Ind-2001
Sublineage:	e
Sequence length:	633
Ambiguities:	0
Material submitted for sequencing:	BTy2
Harvest date of material:	29/03/2019
Primers:	O-1C244F/EUR-2B52R; FMD-3161F/FMD-4303R
Received for sequencing:	11/04/2019
Created:	15/04/2019
Last updated:	15/04/2019

VIBASys IDs: sample 41259, genome 41260, sequence viba\_41261, sequencing info 41262

#### Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_41257	BHU/16/2018	cattle	100.0	0	O	ME-SA	Ind-2001	e
viba_36750	BHU/2/2018	cattle	99.7	0	O	ME-SA	Ind-2001	e
viba_41237	BHU/5/2018	cattle	99.7	0	O	ME-SA	Ind-2001	e
viba_36754	BHU/3/2018	cattle	99.7	0	O	ME-SA	Ind-2001	e
viba_41245	BHU/8/2018	cattle	99.4	0	O	ME-SA	Ind-2001	e
viba_41249	BHU/9/2018	goat	99.4	0	O	ME-SA	Ind-2001	e
viba_41277	BHU/27/2018	cattle	99.4	0	O	ME-SA	Ind-2001	e
viba_41273	BHU/25/2018	cattle	99.4	0	O	ME-SA	Ind-2001	e
viba_41269	BHU/24/2018	cattle	99.4	0	O	ME-SA	Ind-2001	e
viba_41253	BHU/12/2018	cattle	99.4	0	O	ME-SA	Ind-2001	e

#### Most Closely Related Prototype Sequences

see [http://www.wrlfmd.org/fmd\\_genotyping/prototypes.htm](http://www.wrlfmd.org/fmd_genotyping/prototypes.htm)

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_30238	MUR/19/2016	cattle	97.8	0	O	ME-SA	Ind-2001	e
viba_293	BHU/3/2009	cattle	94.0	0	O	ME-SA	Ind-2001	d
viba_541	OMN/7/2001	bovine	92.7	0	O	ME-SA	Ind-2001	b
viba_705	KUW/3/97	bovine	91.8	0	O	ME-SA	Ind-2001	a
viba_397	UAE/4/2008	gazelle	90.7	0	O	ME-SA	Ind-2001	c
viba_285	UKG/35/2001	porcine	88.9	0	O	ME-SA	PanAsia	
viba_766	IRN/31/2009	cattle	88.8	0	O	ME-SA	PanAsia-2	FAR-09
viba_359	Manisa/TUR/69		88.5	0	O	ME-SA		
viba_617	IND/53/79	bovine	88.0	0	O	ME-SA		
viba_719	IRN/88/2009		88.0	0	O	ME-SA	PanAsia-2	ANT-10



Virus sample name:	BHU/22/2018
Sender reference:	168
Location of origin:	Pagli C, Samtse, RLDC, Tshimasham, Western
Country of origin:	Bhutan
Date of collection:	21/09/2018
Host species:	cattle
Serotype:	O
Topotype:	ME-SA
Lineage:	Ind-2001
Sublineage:	e
Sequence length:	633
Ambiguities:	0
Material submitted for sequencing:	BTy1
Harvest date of material:	29/03/2019
Primers:	O-1C244F/EUR-2B52R; FMD-3161F/FMD-4303R
Received for sequencing:	11/04/2019
Created:	15/04/2019
Last updated:	15/04/2019

VIBASys IDs: sample 41263, genome 41264, sequence viba\_41265, sequencing info 41266

#### Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_41249	BHU/9/2018	goat	99.4	0	O	ME-SA	Ind-2001	e
viba_41241	BHU/6/2018	cattle	99.4	0	O	ME-SA	Ind-2001	e
viba_41289	BHU/3/2019	cattle	99.1	0	O	ME-SA	Ind-2001	e
viba_36750	BHU/2/2018	cattle	99.1	0	O	ME-SA	Ind-2001	e
viba_41285	BHU/2/2019	cattle	99.1	0	O	ME-SA	Ind-2001	e
viba_41281	BHU/1/2019	cattle	99.1	0	O	ME-SA	Ind-2001	e
viba_36754	BHU/3/2018	cattle	99.1	0	O	ME-SA	Ind-2001	e
viba_41309	BHU/8/2019	cattle	99.1	0	O	ME-SA	Ind-2001	e
viba_41297	BHU/5/2019	cattle	99.1	0	O	ME-SA	Ind-2001	e
viba_41293	BHU/4/2019	cattle	98.9	0	O	ME-SA	Ind-2001	e

#### Most Closely Related Prototype Sequences

see [http://www.wrlfmd.org/fmd\\_genotyping/prototypes.htm](http://www.wrlfmd.org/fmd_genotyping/prototypes.htm)

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_30238	MUR/19/2016	cattle	97.2	0	O	ME-SA	Ind-2001	e
viba_293	BHU/3/2009	cattle	93.4	0	O	ME-SA	Ind-2001	d
viba_541	OMN/7/2001	bovine	92.3	0	O	ME-SA	Ind-2001	b
viba_705	KUW/3/97	bovine	90.9	0	O	ME-SA	Ind-2001	a
viba_397	UAE/4/2008	gazelle	89.8	0	O	ME-SA	Ind-2001	c
viba_285	UKG/35/2001	porcine	88.7	0	O	ME-SA	PanAsia	
viba_766	IRN/31/2009	cattle	88.6	0	O	ME-SA	PanAsia-2	FAR-09
viba_617	IND/53/79	bovine	87.9	0	O	ME-SA		
viba_860	IRN/6/2015	cattle	87.9	0	O	ME-SA	PanAsia-2	QOM-15
viba_719	IRN/88/2009		87.8	0	O	ME-SA	PanAsia-2	ANT-10

Virus sample name:	BHU/24/2018
Sender reference:	334-1
Location of origin:	Trashigang, Sombaykha, Haa, RLDC, Tshimasham, Western
Country of origin:	Bhutan
Date of collection:	14/12/2018
Host species:	cattle
Serotype:	O
Topotype:	ME-SA
Lineage:	Ind-2001
Sublineage:	e
Sequence length:	633
Ambiguities:	0
Material submitted for sequencing:	BTy1
Harvest date of material:	31/03/2019
Primers:	O-1C244F/EUR-2B52R; FMD-3161F/FMD-4303R
Received for sequencing:	11/04/2019
Created:	15/04/2019
Last updated:	15/04/2019

VIBASys IDs: sample 41267, genome 41268, sequence viba\_41269, sequencing info 41270

#### Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_41277	BHU/27/2018	cattle	100.0	0	O	ME-SA	Ind-2001	e
viba_41273	BHU/25/2018	cattle	100.0	0	O	ME-SA	Ind-2001	e
viba_36750	BHU/2/2018	cattle	99.4	0	O	ME-SA	Ind-2001	e
viba_41237	BHU/5/2018	cattle	99.4	0	O	ME-SA	Ind-2001	e
viba_36754	BHU/3/2018	cattle	99.4	0	O	ME-SA	Ind-2001	e
viba_41261	BHU/18/2018	cattle	99.4	0	O	ME-SA	Ind-2001	e
viba_41257	BHU/16/2018	cattle	99.4	0	O	ME-SA	Ind-2001	e
viba_41245	BHU/8/2018	cattle	99.1	0	O	ME-SA	Ind-2001	e
viba_41249	BHU/9/2018	goat	99.1	0	O	ME-SA	Ind-2001	e
viba_41253	BHU/12/2018	cattle	99.1	0	O	ME-SA	Ind-2001	e

#### Most Closely Related Prototype Sequences

see [http://www.wrlfmd.org/fmd\\_genotyping/prototypes.htm](http://www.wrlfmd.org/fmd_genotyping/prototypes.htm)

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_30238	MUR/19/2016	cattle	97.5	0	O	ME-SA	Ind-2001	e
viba_293	BHU/3/2009	cattle	93.7	0	O	ME-SA	Ind-2001	d
viba_541	OMN/7/2001	bovine	92.1	0	O	ME-SA	Ind-2001	b
viba_705	KUW/3/97	bovine	91.2	0	O	ME-SA	Ind-2001	a
viba_397	UAE/4/2008	gazelle	90.0	0	O	ME-SA	Ind-2001	c
viba_285	UKG/35/2001	porcine	88.6	0	O	ME-SA	PanAsia	
viba_766	IRN/31/2009	cattle	88.5	0	O	ME-SA	PanAsia-2	FAR-09
viba_359	Manisa/TUR/69		88.2	0	O	ME-SA		
viba_719	IRN/88/2009		88.0	0	O	ME-SA	PanAsia-2	ANT-10
viba_617	IND/53/79	bovine	87.7	0	O	ME-SA		

Virus sample name:	BHU/25/2018
Sender reference:	334-2
Location of origin:	Trashigang, Sombaykha, Haa, RLDC, Tshimasham, Western
Country of origin:	Bhutan
Date of collection:	14/12/2018
Host species:	cattle
Serotype:	O
Topotype:	ME-SA
Lineage:	Ind-2001
Sublineage:	e
Sequence length:	633
Ambiguities:	0
Material submitted for sequencing:	BTy1
Harvest date of material:	26/03/2019
Primers:	O-1C244F/EUR-2B52R; FMD-3161F/FMD-4303R
Received for sequencing:	11/04/2019
Created:	15/04/2019
Last updated:	15/04/2019

VIBASys IDs: sample 41271, genome 41272, sequence viba\_41273, sequencing info 41274

#### Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_41277	BHU/27/2018	cattle	100.0	0	O	ME-SA	Ind-2001	e
viba_41269	BHU/24/2018	cattle	100.0	0	O	ME-SA	Ind-2001	e
viba_36750	BHU/2/2018	cattle	99.4	0	O	ME-SA	Ind-2001	e
viba_41237	BHU/5/2018	cattle	99.4	0	O	ME-SA	Ind-2001	e
viba_36754	BHU/3/2018	cattle	99.4	0	O	ME-SA	Ind-2001	e
viba_41261	BHU/18/2018	cattle	99.4	0	O	ME-SA	Ind-2001	e
viba_41257	BHU/16/2018	cattle	99.4	0	O	ME-SA	Ind-2001	e
viba_41245	BHU/8/2018	cattle	99.1	0	O	ME-SA	Ind-2001	e
viba_41249	BHU/9/2018	goat	99.1	0	O	ME-SA	Ind-2001	e
viba_41253	BHU/12/2018	cattle	99.1	0	O	ME-SA	Ind-2001	e

#### Most Closely Related Prototype Sequences

see [http://www.wrlfmd.org/fmd\\_genotyping/prototypes.htm](http://www.wrlfmd.org/fmd_genotyping/prototypes.htm)

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_30238	MUR/19/2016	cattle	97.5	0	O	ME-SA	Ind-2001	e
viba_293	BHU/3/2009	cattle	93.7	0	O	ME-SA	Ind-2001	d
viba_541	OMN/7/2001	bovine	92.1	0	O	ME-SA	Ind-2001	b
viba_705	KUW/3/97	bovine	91.2	0	O	ME-SA	Ind-2001	a
viba_397	UAE/4/2008	gazelle	90.0	0	O	ME-SA	Ind-2001	c
viba_285	UKG/35/2001	porcine	88.6	0	O	ME-SA	PanAsia	
viba_766	IRN/31/2009	cattle	88.5	0	O	ME-SA	PanAsia-2	FAR-09
viba_359	Manisa/TUR/69		88.2	0	O	ME-SA		
viba_719	IRN/88/2009		88.0	0	O	ME-SA	PanAsia-2	ANT-10
viba_617	IND/53/79	bovine	87.7	0	O	ME-SA		

Virus sample name:	BHU/27/2018
Sender reference:	334-8
Location of origin:	Trashigang, Sombaykha, Haa, RLDC, Tshimasham, Western
Country of origin:	Bhutan
Date of collection:	14/12/2018
Host species:	cattle
Serotype:	O
Topotype:	ME-SA
Lineage:	Ind-2001
Sublineage:	e
Sequence length:	633
Ambiguities:	0
Material submitted for sequencing:	BTy2
Harvest date of material:	29/03/2019
Primers:	O-1C244F/EUR-2B52R; FMD-3161F/FMD-4303R
Received for sequencing:	11/04/2019
Created:	15/04/2019
Last updated:	15/04/2019

VIBASys IDs: sample 41275, genome 41276, sequence viba\_41277, sequencing info 41278

#### Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_41273	BHU/25/2018	cattle	100.0	0	O	ME-SA	Ind-2001	e
viba_41269	BHU/24/2018	cattle	100.0	0	O	ME-SA	Ind-2001	e
viba_36750	BHU/2/2018	cattle	99.4	0	O	ME-SA	Ind-2001	e
viba_41237	BHU/5/2018	cattle	99.4	0	O	ME-SA	Ind-2001	e
viba_36754	BHU/3/2018	cattle	99.4	0	O	ME-SA	Ind-2001	e
viba_41261	BHU/18/2018	cattle	99.4	0	O	ME-SA	Ind-2001	e
viba_41257	BHU/16/2018	cattle	99.4	0	O	ME-SA	Ind-2001	e
viba_41245	BHU/8/2018	cattle	99.1	0	O	ME-SA	Ind-2001	e
viba_41249	BHU/9/2018	goat	99.1	0	O	ME-SA	Ind-2001	e
viba_41253	BHU/12/2018	cattle	99.1	0	O	ME-SA	Ind-2001	e

#### Most Closely Related Prototype Sequences

see [http://www.wrlfmd.org/fmd\\_genotyping/prototypes.htm](http://www.wrlfmd.org/fmd_genotyping/prototypes.htm)

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_30238	MUR/19/2016	cattle	97.5	0	O	ME-SA	Ind-2001	e
viba_293	BHU/3/2009	cattle	93.7	0	O	ME-SA	Ind-2001	d
viba_541	OMN/7/2001	bovine	92.1	0	O	ME-SA	Ind-2001	b
viba_705	KUW/3/97	bovine	91.2	0	O	ME-SA	Ind-2001	a
viba_397	UAE/4/2008	gazelle	90.0	0	O	ME-SA	Ind-2001	c
viba_285	UKG/35/2001	porcine	88.6	0	O	ME-SA	PanAsia	
viba_766	IRN/31/2009	cattle	88.5	0	O	ME-SA	PanAsia-2	FAR-09
viba_359	Manisa/TUR/69		88.2	0	O	ME-SA		
viba_719	IRN/88/2009		88.0	0	O	ME-SA	PanAsia-2	ANT-10
viba_617	IND/53/79	bovine	87.7	0	O	ME-SA		

Virus sample name:	BHU/1/2019
Sender reference:	421-1
Location of origin:	Tamshing, Chokhor, Bumthang, RLDC, Zhemgang, Central
Country of origin:	Bhutan
Date of collection:	16/01/2019
Host species:	cattle
Serotype:	O
Topotype:	ME-SA
Lineage:	Ind-2001
Sublineage:	e
Sequence length:	633
Ambiguities:	0
Material submitted for sequencing:	BTy1
Harvest date of material:	26/03/2019
Primers:	O-1C244F/EUR-2B52R; FMD-3161F/FMD-4303R
Received for sequencing:	11/04/2019
Created:	15/04/2019
Last updated:	15/04/2019

VIBASys IDs: sample 41279, genome 41280, sequence viba\_41281, sequencing info 41282

#### Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_41289	BHU/3/2019	cattle	99.8	0	O	ME-SA	Ind-2001	e
viba_41285	BHU/2/2019	cattle	99.8	0	O	ME-SA	Ind-2001	e
viba_41309	BHU/8/2019	cattle	99.8	0	O	ME-SA	Ind-2001	e
viba_41293	BHU/4/2019	cattle	99.7	0	O	ME-SA	Ind-2001	e
viba_41305	BHU/7/2019	cattle	99.7	0	O	ME-SA	Ind-2001	e
viba_41301	BHU/6/2019	cattle	99.7	0	O	ME-SA	Ind-2001	e
viba_41297	BHU/5/2019	cattle	99.5	0	O	ME-SA	Ind-2001	e
viba_41249	BHU/9/2018	goat	99.4	0	O	ME-SA	Ind-2001	e
viba_41241	BHU/6/2018	cattle	99.4	0	O	ME-SA	Ind-2001	e
viba_36750	BHU/2/2018	cattle	99.1	0	O	ME-SA	Ind-2001	e

#### Most Closely Related Prototype Sequences

see [http://www.wrlfmd.org/fmd\\_genotyping/prototypes.htm](http://www.wrlfmd.org/fmd_genotyping/prototypes.htm)

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_30238	MUR/19/2016	cattle	97.2	0	O	ME-SA	Ind-2001	e
viba_293	BHU/3/2009	cattle	93.7	0	O	ME-SA	Ind-2001	d
viba_541	OMN/7/2001	bovine	92.1	0	O	ME-SA	Ind-2001	b
viba_705	KUW/3/97	bovine	91.2	0	O	ME-SA	Ind-2001	a
viba_397	UAE/4/2008	gazelle	90.1	0	O	ME-SA	Ind-2001	c
viba_766	IRN/31/2009	cattle	89.1	0	O	ME-SA	PanAsia-2	FAR-09
viba_285	UKG/35/2001	porcine	89.0	0	O	ME-SA	PanAsia	
viba_719	IRN/88/2009		88.3	0	O	ME-SA	PanAsia-2	ANT-10
viba_860	IRN/6/2015	cattle	88.1	0	O	ME-SA	PanAsia-2	QOM-15
viba_617	IND/53/79	bovine	88.0	0	O	ME-SA		

Virus sample name:	BHU/2/2019
Sender reference:	421-2
Location of origin:	Tamshing, Chokhor, Bumthang, RLDC, Zhemgang, Central
Country of origin:	Bhutan
Date of collection:	16/01/2019
Host species:	cattle
Serotype:	O
Topotype:	ME-SA
Lineage:	Ind-2001
Sublineage:	e
Sequence length:	633
Ambiguities:	0
Material submitted for sequencing:	BTy1
Harvest date of material:	27/03/2019
Primers:	O-1C244F/EUR-2B52R; FMD-3161F/FMD-4303R
Received for sequencing:	11/04/2019
Created:	15/04/2019
Last updated:	15/04/2019

VIBASys IDs: sample 41283, genome 41284, sequence viba\_41285, sequencing info 41286

#### Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_41289	BHU/3/2019	cattle	100.0	0	O	ME-SA	Ind-2001	e
viba_41309	BHU/8/2019	cattle	100.0	0	O	ME-SA	Ind-2001	e
viba_41281	BHU/1/2019	cattle	99.8	0	O	ME-SA	Ind-2001	e
viba_41293	BHU/4/2019	cattle	99.8	0	O	ME-SA	Ind-2001	e
viba_41305	BHU/7/2019	cattle	99.8	0	O	ME-SA	Ind-2001	e
viba_41301	BHU/6/2019	cattle	99.8	0	O	ME-SA	Ind-2001	e
viba_41297	BHU/5/2019	cattle	99.7	0	O	ME-SA	Ind-2001	e
viba_41249	BHU/9/2018	goat	99.4	0	O	ME-SA	Ind-2001	e
viba_41241	BHU/6/2018	cattle	99.4	0	O	ME-SA	Ind-2001	e
viba_36750	BHU/2/2018	cattle	99.1	0	O	ME-SA	Ind-2001	e

#### Most Closely Related Prototype Sequences

see [http://www.wrlfmd.org/fmd\\_genotyping/prototypes.htm](http://www.wrlfmd.org/fmd_genotyping/prototypes.htm)

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_30238	MUR/19/2016	cattle	97.2	0	O	ME-SA	Ind-2001	e
viba_293	BHU/3/2009	cattle	93.7	0	O	ME-SA	Ind-2001	d
viba_541	OMN/7/2001	bovine	92.3	0	O	ME-SA	Ind-2001	b
viba_705	KUW/3/97	bovine	91.4	0	O	ME-SA	Ind-2001	a
viba_397	UAE/4/2008	gazelle	90.3	0	O	ME-SA	Ind-2001	c
viba_766	IRN/31/2009	cattle	89.3	0	O	ME-SA	PanAsia-2	FAR-09
viba_285	UKG/35/2001	porcine	89.2	0	O	ME-SA	PanAsia	
viba_719	IRN/88/2009		88.5	0	O	ME-SA	PanAsia-2	ANT-10
viba_617	IND/53/79	bovine	88.2	0	O	ME-SA		
viba_860	IRN/6/2015	cattle	88.1	0	O	ME-SA	PanAsia-2	QOM-15

Virus sample name:	BHU/3/2019
Sender reference:	421-3
Location of origin:	Tamshing, Chokhor, Bumthang, RLDC, Zhemgang, Central
Country of origin:	Bhutan
Date of collection:	16/01/2019
Host species:	cattle
Serotype:	O
Topotype:	ME-SA
Lineage:	Ind-2001
Sublineage:	e
Sequence length:	633
Ambiguities:	0
Material submitted for sequencing:	BTy1
Harvest date of material:	29/03/2019
Primers:	O-1C244F/EUR-2B52R; FMD-3161F/FMD-4303R
Received for sequencing:	11/04/2019
Created:	15/04/2019
Last updated:	15/04/2019

VIBASys IDs: sample 41287, genome 41288, sequence viba\_41289, sequencing info 41290

#### Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_41285	BHU/2/2019	cattle	100.0	0	O	ME-SA	Ind-2001	e
viba_41309	BHU/8/2019	cattle	100.0	0	O	ME-SA	Ind-2001	e
viba_41281	BHU/1/2019	cattle	99.8	0	O	ME-SA	Ind-2001	e
viba_41293	BHU/4/2019	cattle	99.8	0	O	ME-SA	Ind-2001	e
viba_41305	BHU/7/2019	cattle	99.8	0	O	ME-SA	Ind-2001	e
viba_41301	BHU/6/2019	cattle	99.8	0	O	ME-SA	Ind-2001	e
viba_41297	BHU/5/2019	cattle	99.7	0	O	ME-SA	Ind-2001	e
viba_41249	BHU/9/2018	goat	99.4	0	O	ME-SA	Ind-2001	e
viba_41241	BHU/6/2018	cattle	99.4	0	O	ME-SA	Ind-2001	e
viba_36750	BHU/2/2018	cattle	99.1	0	O	ME-SA	Ind-2001	e

#### Most Closely Related Prototype Sequences

see [http://www.wrlfmd.org/fmd\\_genotyping/prototypes.htm](http://www.wrlfmd.org/fmd_genotyping/prototypes.htm)

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_30238	MUR/19/2016	cattle	97.2	0	O	ME-SA	Ind-2001	e
viba_293	BHU/3/2009	cattle	93.7	0	O	ME-SA	Ind-2001	d
viba_541	OMN/7/2001	bovine	92.3	0	O	ME-SA	Ind-2001	b
viba_705	KUW/3/97	bovine	91.4	0	O	ME-SA	Ind-2001	a
viba_397	UAE/4/2008	gazelle	90.3	0	O	ME-SA	Ind-2001	c
viba_766	IRN/31/2009	cattle	89.3	0	O	ME-SA	PanAsia-2	FAR-09
viba_285	UKG/35/2001	porcine	89.2	0	O	ME-SA	PanAsia	
viba_719	IRN/88/2009		88.5	0	O	ME-SA	PanAsia-2	ANT-10
viba_617	IND/53/79	bovine	88.2	0	O	ME-SA		
viba_860	IRN/6/2015	cattle	88.1	0	O	ME-SA	PanAsia-2	QOM-15

Virus sample name:	BHU/4/2019
Sender reference:	421-5
Location of origin:	Tamshing, Chokhor, Bumthang, RLDC, Zhemgang, Central
Country of origin:	Bhutan
Date of collection:	16/01/2019
Host species:	cattle
Serotype:	O
Topotype:	ME-SA
Lineage:	Ind-2001
Sublineage:	e
Sequence length:	633
Ambiguities:	0
Material submitted for sequencing:	BTy1
Harvest date of material:	26/03/2019
Primers:	O-1C244F/EUR-2B52R; FMD-3161F/FMD-4303R
Received for sequencing:	11/04/2019
Created:	15/04/2019
Last updated:	15/04/2019

VIBASys IDs: sample 41291, genome 41292, sequence viba\_41293, sequencing info 41294

#### Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_41301	BHU/6/2019	cattle	100.0	0	O	ME-SA	Ind-2001	e
viba_41289	BHU/3/2019	cattle	99.8	0	O	ME-SA	Ind-2001	e
viba_41285	BHU/2/2019	cattle	99.8	0	O	ME-SA	Ind-2001	e
viba_41309	BHU/8/2019	cattle	99.8	0	O	ME-SA	Ind-2001	e
viba_41297	BHU/5/2019	cattle	99.8	0	O	ME-SA	Ind-2001	e
viba_41281	BHU/1/2019	cattle	99.7	0	O	ME-SA	Ind-2001	e
viba_41305	BHU/7/2019	cattle	99.7	0	O	ME-SA	Ind-2001	e
viba_41249	BHU/9/2018	goat	99.2	0	O	ME-SA	Ind-2001	e
viba_41241	BHU/6/2018	cattle	99.2	0	O	ME-SA	Ind-2001	e
viba_36750	BHU/2/2018	cattle	98.9	0	O	ME-SA	Ind-2001	e

#### Most Closely Related Prototype Sequences

see [http://www.wrlfmd.org/fmd\\_genotyping/prototypes.htm](http://www.wrlfmd.org/fmd_genotyping/prototypes.htm)

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_30238	MUR/19/2016	cattle	97.0	0	O	ME-SA	Ind-2001	e
viba_293	BHU/3/2009	cattle	93.5	0	O	ME-SA	Ind-2001	d
viba_541	OMN/7/2001	bovine	92.1	0	O	ME-SA	Ind-2001	b
viba_705	KUW/3/97	bovine	91.2	0	O	ME-SA	Ind-2001	a
viba_397	UAE/4/2008	gazelle	90.1	0	O	ME-SA	Ind-2001	c
viba_766	IRN/31/2009	cattle	89.1	0	O	ME-SA	PanAsia-2	FAR-09
viba_285	UKG/35/2001	porcine	89.0	0	O	ME-SA	PanAsia	
viba_719	IRN/88/2009		88.3	0	O	ME-SA	PanAsia-2	ANT-10
viba_617	IND/53/79	bovine	88.0	0	O	ME-SA		
viba_860	IRN/6/2015	cattle	87.9	0	O	ME-SA	PanAsia-2	QOM-15



Virus sample name:	BHU/5/2019
Sender reference:	421-6
Location of origin:	Kuenchosum, Chokhor, Bumthang, RLDC,Zhemgang, Central
Country of origin:	Bhutan
Date of collection:	16/01/2019
Host species:	cattle
Serotype:	O
Topotype:	ME-SA
Lineage:	Ind-2001
Sublineage:	e
Sequence length:	633
Ambiguities:	0
Material submitted for sequencing:	BTy2
Harvest date of material:	29/03/2019
Primers:	O-1C244F/EUR-2B52R; FMD-3161F/FMD-4303R
Received for sequencing:	11/04/2019
Created:	15/04/2019
Last updated:	15/04/2019

VIBASys IDs: sample 41295, genome 41296, sequence viba\_41297, sequencing info 41298

#### Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_41293	BHU/4/2019	cattle	99.8	0	O	ME-SA	Ind-2001	e
viba_41301	BHU/6/2019	cattle	99.8	0	O	ME-SA	Ind-2001	e
viba_41289	BHU/3/2019	cattle	99.7	0	O	ME-SA	Ind-2001	e
viba_41285	BHU/2/2019	cattle	99.7	0	O	ME-SA	Ind-2001	e
viba_41309	BHU/8/2019	cattle	99.7	0	O	ME-SA	Ind-2001	e
viba_41281	BHU/1/2019	cattle	99.5	0	O	ME-SA	Ind-2001	e
viba_41305	BHU/7/2019	cattle	99.5	0	O	ME-SA	Ind-2001	e
viba_41249	BHU/9/2018	goat	99.4	0	O	ME-SA	Ind-2001	e
viba_41241	BHU/6/2018	cattle	99.4	0	O	ME-SA	Ind-2001	e
viba_36750	BHU/2/2018	cattle	99.1	0	O	ME-SA	Ind-2001	e

#### Most Closely Related Prototype Sequences

see [http://www.wrlfmd.org/fmd\\_genotyping/prototypes.htm](http://www.wrlfmd.org/fmd_genotyping/prototypes.htm)

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_30238	MUR/19/2016	cattle	97.2	0	O	ME-SA	Ind-2001	e
viba_293	BHU/3/2009	cattle	93.7	0	O	ME-SA	Ind-2001	d
viba_541	OMN/7/2001	bovine	92.3	0	O	ME-SA	Ind-2001	b
viba_705	KUW/3/97	bovine	91.4	0	O	ME-SA	Ind-2001	a
viba_397	UAE/4/2008	gazelle	90.3	0	O	ME-SA	Ind-2001	c
viba_766	IRN/31/2009	cattle	89.3	0	O	ME-SA	PanAsia-2	FAR-09
viba_285	UKG/35/2001	porcine	89.2	0	O	ME-SA	PanAsia	
viba_719	IRN/88/2009		88.5	0	O	ME-SA	PanAsia-2	ANT-10
viba_617	IND/53/79	bovine	88.2	0	O	ME-SA		
viba_860	IRN/6/2015	cattle	88.1	0	O	ME-SA	PanAsia-2	QOM-15

Virus sample name:	BHU/6/2019
Sender reference:	421-7
Location of origin:	Kuenchosum, Chokhor, Bumthang, RLDC,Zhemgang, Central
Country of origin:	Bhutan
Date of collection:	16/01/2019
Host species:	cattle
Serotype:	O
Topotype:	ME-SA
Lineage:	Ind-2001
Sublineage:	e
Sequence length:	633
Ambiguities:	0
Material submitted for sequencing:	BTy1
Harvest date of material:	26/03/2019
Primers:	O-1C244F/EUR-2B52R; FMD-3161F/FMD-4303R
Received for sequencing:	11/04/2019
Created:	15/04/2019
Last updated:	15/04/2019

VIBASys IDs: sample 41299, genome 41300, sequence viba\_41301, sequencing info 41302

#### Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_41293	BHU/4/2019	cattle	100.0	0	O	ME-SA	Ind-2001	e
viba_41289	BHU/3/2019	cattle	99.8	0	O	ME-SA	Ind-2001	e
viba_41285	BHU/2/2019	cattle	99.8	0	O	ME-SA	Ind-2001	e
viba_41309	BHU/8/2019	cattle	99.8	0	O	ME-SA	Ind-2001	e
viba_41297	BHU/5/2019	cattle	99.8	0	O	ME-SA	Ind-2001	e
viba_41281	BHU/1/2019	cattle	99.7	0	O	ME-SA	Ind-2001	e
viba_41305	BHU/7/2019	cattle	99.7	0	O	ME-SA	Ind-2001	e
viba_41249	BHU/9/2018	goat	99.2	0	O	ME-SA	Ind-2001	e
viba_41241	BHU/6/2018	cattle	99.2	0	O	ME-SA	Ind-2001	e
viba_36750	BHU/2/2018	cattle	98.9	0	O	ME-SA	Ind-2001	e

#### Most Closely Related Prototype Sequences

see [http://www.wrlfmd.org/fmd\\_genotyping/prototypes.htm](http://www.wrlfmd.org/fmd_genotyping/prototypes.htm)

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_30238	MUR/19/2016	cattle	97.0	0	O	ME-SA	Ind-2001	e
viba_293	BHU/3/2009	cattle	93.5	0	O	ME-SA	Ind-2001	d
viba_541	OMN/7/2001	bovine	92.1	0	O	ME-SA	Ind-2001	b
viba_705	KUW/3/97	bovine	91.2	0	O	ME-SA	Ind-2001	a
viba_397	UAE/4/2008	gazelle	90.1	0	O	ME-SA	Ind-2001	c
viba_766	IRN/31/2009	cattle	89.1	0	O	ME-SA	PanAsia-2	FAR-09
viba_285	UKG/35/2001	porcine	89.0	0	O	ME-SA	PanAsia	
viba_719	IRN/88/2009		88.3	0	O	ME-SA	PanAsia-2	ANT-10
viba_617	IND/53/79	bovine	88.0	0	O	ME-SA		
viba_860	IRN/6/2015	cattle	87.9	0	O	ME-SA	PanAsia-2	QOM-15

Virus sample name:	BHU/7/2019
Sender reference:	421-8
Location of origin:	Kuenchosum, Chokhor, Bumthang, RLDC,Zhemgang, Central
Country of origin:	Bhutan
Date of collection:	16/01/2019
Host species:	cattle
Serotype:	O
Topotype:	ME-SA
Lineage:	Ind-2001
Sublineage:	e
Sequence length:	633
Ambiguities:	0
Material submitted for sequencing:	BTy1
Harvest date of material:	02/04/2019
Primers:	O-1C244F/EUR-2B52R; FMD-3161F/FMD-4303R
Received for sequencing:	11/04/2019
Created:	15/04/2019
Last updated:	15/04/2019

VIBASys IDs: sample 41303, genome 41304, sequence viba\_41305, sequencing info 41306

#### Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_41289	BHU/3/2019	cattle	99.8	0	O	ME-SA	Ind-2001	e
viba_41285	BHU/2/2019	cattle	99.8	0	O	ME-SA	Ind-2001	e
viba_41309	BHU/8/2019	cattle	99.8	0	O	ME-SA	Ind-2001	e
viba_41281	BHU/1/2019	cattle	99.7	0	O	ME-SA	Ind-2001	e
viba_41293	BHU/4/2019	cattle	99.7	0	O	ME-SA	Ind-2001	e
viba_41301	BHU/6/2019	cattle	99.7	0	O	ME-SA	Ind-2001	e
viba_41297	BHU/5/2019	cattle	99.5	0	O	ME-SA	Ind-2001	e
viba_41249	BHU/9/2018	goat	99.2	0	O	ME-SA	Ind-2001	e
viba_41241	BHU/6/2018	cattle	99.2	0	O	ME-SA	Ind-2001	e
viba_36750	BHU/2/2018	cattle	98.9	0	O	ME-SA	Ind-2001	e

#### Most Closely Related Prototype Sequences

see [http://www.wrlfmd.org/fmd\\_genotyping/prototypes.htm](http://www.wrlfmd.org/fmd_genotyping/prototypes.htm)

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_30238	MUR/19/2016	cattle	97.0	0	O	ME-SA	Ind-2001	e
viba_293	BHU/3/2009	cattle	93.5	0	O	ME-SA	Ind-2001	d
viba_541	OMN/7/2001	bovine	92.1	0	O	ME-SA	Ind-2001	b
viba_705	KUW/3/97	bovine	91.2	0	O	ME-SA	Ind-2001	a
viba_397	UAE/4/2008	gazelle	90.1	0	O	ME-SA	Ind-2001	c
viba_766	IRN/31/2009	cattle	89.1	0	O	ME-SA	PanAsia-2	FAR-09
viba_285	UKG/35/2001	porcine	89.0	0	O	ME-SA	PanAsia	
viba_719	IRN/88/2009		88.3	0	O	ME-SA	PanAsia-2	ANT-10
viba_617	IND/53/79	bovine	88.0	0	O	ME-SA		
viba_860	IRN/6/2015	cattle	87.9	0	O	ME-SA	PanAsia-2	QOM-15

Virus sample name:	BHU/8/2019
Sender reference:	421-9
Location of origin:	Kuenchosum, Chokhor, Bumthang, RLDC,Zhemgang, Central
Country of origin:	Bhutan
Date of collection:	16/01/2019
Host species:	cattle
Serotype:	O
Topotype:	ME-SA
Lineage:	Ind-2001
Sublineage:	e
Sequence length:	633
Ambiguities:	0
Material submitted for sequencing:	BTy1
Harvest date of material:	29/03/2019
Primers:	O-1C244F/EUR-2B52R; FMD-3161F/FMD-4303R
Received for sequencing:	11/04/2019
Created:	15/04/2019
Last updated:	15/04/2019

VIBASys IDs: sample 41307, genome 41308, sequence viba\_41309, sequencing info 41310

#### Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_41289	BHU/3/2019	cattle	100.0	0	O	ME-SA	Ind-2001	e
viba_41285	BHU/2/2019	cattle	100.0	0	O	ME-SA	Ind-2001	e
viba_41281	BHU/1/2019	cattle	99.8	0	O	ME-SA	Ind-2001	e
viba_41293	BHU/4/2019	cattle	99.8	0	O	ME-SA	Ind-2001	e
viba_41305	BHU/7/2019	cattle	99.8	0	O	ME-SA	Ind-2001	e
viba_41301	BHU/6/2019	cattle	99.8	0	O	ME-SA	Ind-2001	e
viba_41297	BHU/5/2019	cattle	99.7	0	O	ME-SA	Ind-2001	e
viba_41249	BHU/9/2018	goat	99.4	0	O	ME-SA	Ind-2001	e
viba_41241	BHU/6/2018	cattle	99.4	0	O	ME-SA	Ind-2001	e
viba_36750	BHU/2/2018	cattle	99.1	0	O	ME-SA	Ind-2001	e

#### Most Closely Related Prototype Sequences

see [http://www.wrlfmd.org/fmd\\_genotyping/prototypes.htm](http://www.wrlfmd.org/fmd_genotyping/prototypes.htm)

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_30238	MUR/19/2016	cattle	97.2	0	O	ME-SA	Ind-2001	e
viba_293	BHU/3/2009	cattle	93.7	0	O	ME-SA	Ind-2001	d
viba_541	OMN/7/2001	bovine	92.3	0	O	ME-SA	Ind-2001	b
viba_705	KUW/3/97	bovine	91.4	0	O	ME-SA	Ind-2001	a
viba_397	UAE/4/2008	gazelle	90.3	0	O	ME-SA	Ind-2001	c
viba_766	IRN/31/2009	cattle	89.3	0	O	ME-SA	PanAsia-2	FAR-09
viba_285	UKG/35/2001	porcine	89.2	0	O	ME-SA	PanAsia	
viba_719	IRN/88/2009		88.5	0	O	ME-SA	PanAsia-2	ANT-10
viba_617	IND/53/79	bovine	88.2	0	O	ME-SA		
viba_860	IRN/6/2015	cattle	88.1	0	O	ME-SA	PanAsia-2	QOM-15

Virus sample name:	BHU/9/2019
Sender reference:	424-1
Location of origin:	Phoonab, Doteng, Paro, RLDC, Tshimasham, Western
Country of origin:	Bhutan
Date of collection:	18/01/2019
Host species:	cattle
Serotype:	O
Topotype:	ME-SA
Lineage:	Ind-2001
Sublineage:	e
Sequence length:	633
Ambiguities:	0
Material submitted for sequencing:	BTy1
Harvest date of material:	27/03/2019
Primers:	O-1C244F/EUR-2B52R; FMD-3161F/FMD-4303R
Received for sequencing:	11/04/2019
Created:	15/04/2019
Last updated:	15/04/2019

VIBASys IDs: sample 41311, genome 41312, sequence viba\_41313, sequencing info 41314

#### Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_41317	BHU/10/2019	cattle	100.0	0	O	ME-SA	Ind-2001	e
viba_36750	BHU/2/2018	cattle	99.2	0	O	ME-SA	Ind-2001	e
viba_41249	BHU/9/2018	goat	99.2	0	O	ME-SA	Ind-2001	e
viba_36754	BHU/3/2018	cattle	99.2	0	O	ME-SA	Ind-2001	e
viba_41241	BHU/6/2018	cattle	99.2	0	O	ME-SA	Ind-2001	e
viba_41245	BHU/8/2018	cattle	98.9	0	O	ME-SA	Ind-2001	e
viba_41237	BHU/5/2018	cattle	98.9	0	O	ME-SA	Ind-2001	e
viba_41253	BHU/12/2018	cattle	98.9	0	O	ME-SA	Ind-2001	e
viba_41261	BHU/18/2018	cattle	98.9	0	O	ME-SA	Ind-2001	e
viba_41257	BHU/16/2018	cattle	98.9	0	O	ME-SA	Ind-2001	e

#### Most Closely Related Prototype Sequences

see [http://www.wrlfmd.org/fmd\\_genotyping/prototypes.htm](http://www.wrlfmd.org/fmd_genotyping/prototypes.htm)

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_30238	MUR/19/2016	cattle	97.3	0	O	ME-SA	Ind-2001	e
viba_293	BHU/3/2009	cattle	93.2	0	O	ME-SA	Ind-2001	d
viba_541	OMN/7/2001	bovine	92.1	0	O	ME-SA	Ind-2001	b
viba_705	KUW/3/97	bovine	90.9	0	O	ME-SA	Ind-2001	a
viba_397	UAE/4/2008	gazelle	89.8	0	O	ME-SA	Ind-2001	c
viba_766	IRN/31/2009	cattle	88.5	0	O	ME-SA	PanAsia-2	FAR-09
viba_285	UKG/35/2001	porcine	88.4	0	O	ME-SA	PanAsia	
viba_719	IRN/88/2009		88.0	0	O	ME-SA	PanAsia-2	ANT-10
viba_359	Manisa/TUR/69		87.7	0	O	ME-SA		
viba_617	IND/53/79	bovine	87.7	0	O	ME-SA		

Virus sample name:	BHU/10/2019
Sender reference:	424-2
Location of origin:	Phoonab, Doteng, Paro, RLDC, Tshimasham, Western
Country of origin:	Bhutan
Date of collection:	18/01/2019
Host species:	cattle
Serotype:	O
Topotype:	ME-SA
Lineage:	Ind-2001
Sublineage:	e
Sequence length:	633
Ambiguities:	0
Material submitted for sequencing:	BTy1
Harvest date of material:	26/03/2019
Primers:	O-1C244F/EUR-2B52R; FMD-3161F/FMD-4303R
Received for sequencing:	11/04/2019
Created:	15/04/2019
Last updated:	15/04/2019
VIBASys IDs: sample 41315, genome 41316, sequence viba_41317, sequencing info 41318	

#### Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_41313	BHU/9/2019	cattle	100.0	0	O	ME-SA	Ind-2001	e
viba_36750	BHU/2/2018	cattle	99.2	0	O	ME-SA	Ind-2001	e
viba_41249	BHU/9/2018	goat	99.2	0	O	ME-SA	Ind-2001	e
viba_36754	BHU/3/2018	cattle	99.2	0	O	ME-SA	Ind-2001	e
viba_41241	BHU/6/2018	cattle	99.2	0	O	ME-SA	Ind-2001	e
viba_41245	BHU/8/2018	cattle	98.9	0	O	ME-SA	Ind-2001	e
viba_41237	BHU/5/2018	cattle	98.9	0	O	ME-SA	Ind-2001	e
viba_41253	BHU/12/2018	cattle	98.9	0	O	ME-SA	Ind-2001	e
viba_41261	BHU/18/2018	cattle	98.9	0	O	ME-SA	Ind-2001	e
viba_41257	BHU/16/2018	cattle	98.9	0	O	ME-SA	Ind-2001	e

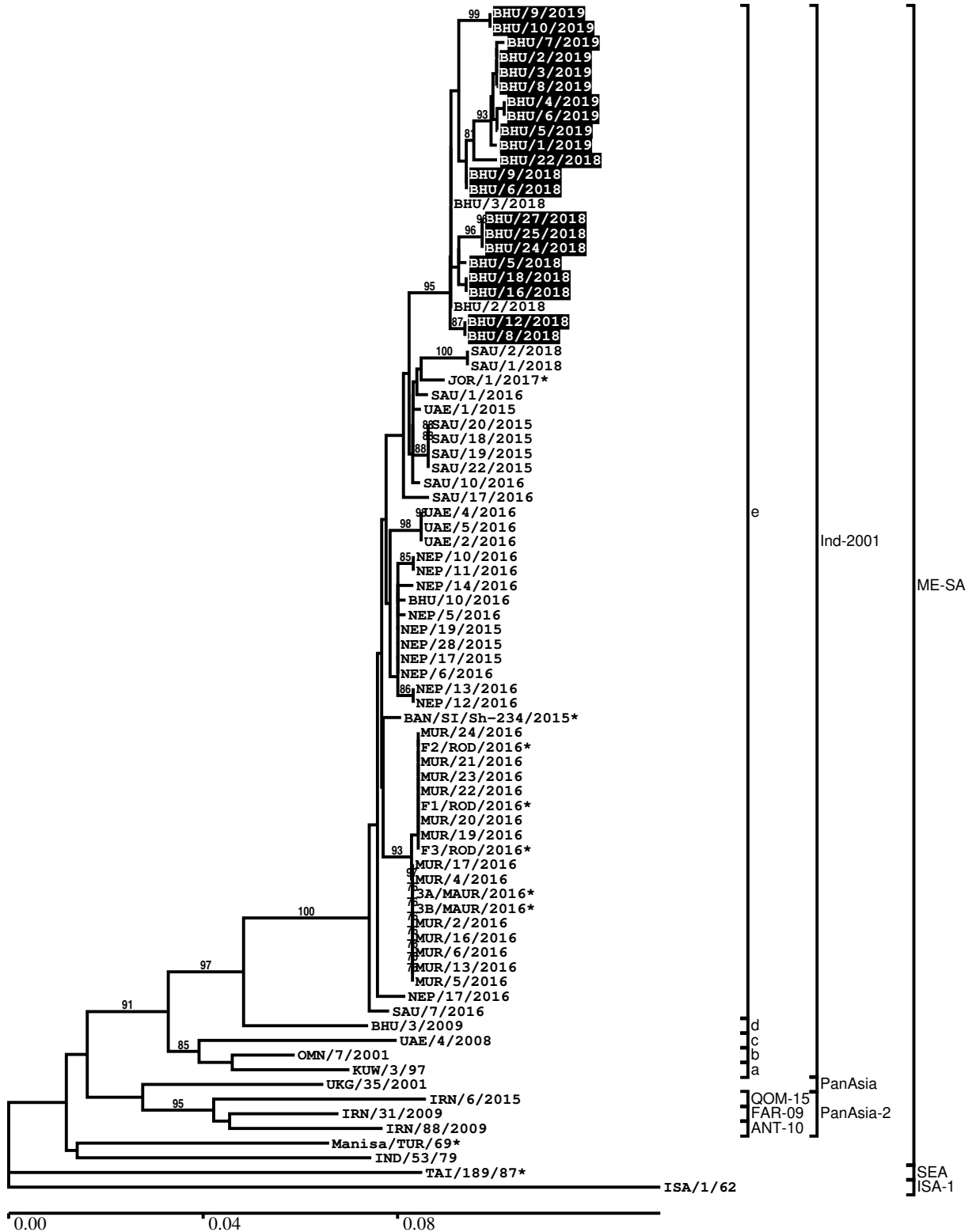
#### Most Closely Related Prototype Sequences

see [http://www.wrlfmd.org/fmd\\_genotyping/prototypes.htm](http://www.wrlfmd.org/fmd_genotyping/prototypes.htm)

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_30238	MUR/19/2016	cattle	97.3	0	O	ME-SA	Ind-2001	e
viba_293	BHU/3/2009	cattle	93.2	0	O	ME-SA	Ind-2001	d
viba_541	OMN/7/2001	bovine	92.1	0	O	ME-SA	Ind-2001	b
viba_705	KUW/3/97	bovine	90.9	0	O	ME-SA	Ind-2001	a
viba_397	UAE/4/2008	gazelle	89.8	0	O	ME-SA	Ind-2001	c
viba_766	IRN/31/2009	cattle	88.5	0	O	ME-SA	PanAsia-2	FAR-09
viba_285	UKG/35/2001	porcine	88.4	0	O	ME-SA	PanAsia	
viba_719	IRN/88/2009		88.0	0	O	ME-SA	PanAsia-2	ANT-10
viba_359	Manisa/TUR/69		87.7	0	O	ME-SA		
viba_617	IND/53/79	bovine	87.7	0	O	ME-SA		

Report on FMDV O in Bhutan in 2018, 2019

Batch: WRLFMD/2019/00013



\*, not a WRLFMD Reference Number

## Analysis Parameters

VP1 subsequence extractor:	vp1_O
Query sequence set:	WRLFMD/2019/00013-Bhutan-O (21 sequences)
Sequence database set:	allseqs_O (4452 sequences)
Prototype sequence set:	!prototypes_O (49 sequences)
Number of related sequences reported:	10
Minimal VP1 subsequence match length	600
Sequence alignment method:	muscle (default parameters)
Sequence alignment length:	636
Phylogeny reconstruction method:	fdnadist, fneighbor
Number of bootstrap samples:	1000
Random seed for bootstrapping:	1
Displaying bootstrap values above:	70.0%
Number of sequences in tree capped at:	100
Number of prototype sequences in tree:	11
VIBASys version:	reflabs-1.1.2

## Sequences in the Phylogenetic Tree

All sequences in the tree are in taxonomic group FMDV/O

label	accession	host(s)	lab	country	taxonomic information
BHU/9/2019	n/a	cattle	WRLFMD	Bhutan	ME-SA/Ind-2001/e
BHU/10/2019	n/a	cattle	WRLFMD	Bhutan	ME-SA/Ind-2001/e
BHU/7/2019	n/a	cattle	WRLFMD	Bhutan	ME-SA/Ind-2001/e
BHU/2/2019	n/a	cattle	WRLFMD	Bhutan	ME-SA/Ind-2001/e
BHU/3/2019	n/a	cattle	WRLFMD	Bhutan	ME-SA/Ind-2001/e
BHU/8/2019	n/a	cattle	WRLFMD	Bhutan	ME-SA/Ind-2001/e
BHU/4/2019	n/a	cattle	WRLFMD	Bhutan	ME-SA/Ind-2001/e
BHU/6/2019	n/a	cattle	WRLFMD	Bhutan	ME-SA/Ind-2001/e
BHU/5/2019	n/a	cattle	WRLFMD	Bhutan	ME-SA/Ind-2001/e
BHU/1/2019	n/a	cattle	WRLFMD	Bhutan	ME-SA/Ind-2001/e
BHU/22/2018	n/a	cattle	WRLFMD	Bhutan	ME-SA/Ind-2001/e
BHU/9/2018	n/a	goat	WRLFMD	Bhutan	ME-SA/Ind-2001/e
BHU/6/2018	n/a	cattle	WRLFMD	Bhutan	ME-SA/Ind-2001/e
BHU/3/2018	n/a	cattle	WRLFMD	Bhutan	ME-SA/Ind-2001/e
BHU/27/2018	n/a	cattle	WRLFMD	Bhutan	ME-SA/Ind-2001/e
BHU/25/2018	n/a	cattle	WRLFMD	Bhutan	ME-SA/Ind-2001/e
BHU/24/2018	n/a	cattle	WRLFMD	Bhutan	ME-SA/Ind-2001/e
BHU/5/2018	n/a	cattle	WRLFMD	Bhutan	ME-SA/Ind-2001/e
BHU/18/2018	n/a	cattle	WRLFMD	Bhutan	ME-SA/Ind-2001/e
BHU/16/2018	n/a	cattle	WRLFMD	Bhutan	ME-SA/Ind-2001/e
BHU/2/2018	n/a	cattle	WRLFMD	Bhutan	ME-SA/Ind-2001/e
BHU/12/2018	n/a	cattle	WRLFMD	Bhutan	ME-SA/Ind-2001/e
BHU/8/2018	n/a	cattle	WRLFMD	Bhutan	ME-SA/Ind-2001/e
SAU/2/2018	n/a	gazelle	WRLFMD	Saudi Arabia	ME-SA/Ind-2001/e
SAU/1/2018	n/a	oryx	WRLFMD	Saudi Arabia	ME-SA/Ind-2001/e
JOR/1/2017*	MH053353	sheep	JUST	Jordan	ME-SA/Ind-2001/e
SAU/1/2016	MG972593	cattle	WRLFMD	Saudi Arabia	ME-SA/Ind-2001/e
UAE/1/2015	MG972605	gazelle	WRLFMD	United Arab Emirates	ME-SA/Ind-2001/e
SAU/20/2015	MG972591	bovine	WRLFMD	Saudi Arabia	ME-SA/Ind-2001/e
SAU/18/2015	MG972589	bovine	WRLFMD	Saudi Arabia	ME-SA/Ind-2001/e
SAU/19/2015	MG972590	bovine	WRLFMD	Saudi Arabia	ME-SA/Ind-2001/e
SAU/22/2015	MG972592	bovine	WRLFMD	Saudi Arabia	ME-SA/Ind-2001/e
SAU/10/2016	MG972597	bovine	WRLFMD	Saudi Arabia	ME-SA/Ind-2001/e
SAU/17/2016	MG972598	cattle	WRLFMD	Saudi Arabia	ME-SA/Ind-2001/e
UAE/4/2016	MG972609	cattle	WRLFMD	United Arab Emirates	ME-SA/Ind-2001/e

*continued on next page*



label	accession	host(s)	lab	country	taxonomic information
UAE/5/2016	MG972610	cattle	WRLFMD	United Arab Emirates	ME-SA/Ind-2001/e
UAE/2/2016	MG972607	cattle	WRLFMD	United Arab Emirates	ME-SA/Ind-2001/e
NEP/10/2016	MG972558	goat	WRLFMD	Nepal	ME-SA/Ind-2001/e
NEP/11/2016	MG972559	goat	WRLFMD	Nepal	ME-SA/Ind-2001/e
NEP/14/2016	MG972562	water buffalo	WRLFMD	Nepal	ME-SA/Ind-2001/e
BHU/10/2016	MG972484	cattle	WRLFMD	Bhutan	ME-SA/Ind-2001/e
NEP/5/2016	KY449053	cattle	WRLFMD	Nepal	ME-SA/Ind-2001/e
NEP/19/2015	KY449051	cattle	WRLFMD	Nepal	ME-SA/Ind-2001/e
NEP/28/2015	KY449052	cattle	WRLFMD	Nepal	ME-SA/Ind-2001/e
NEP/17/2015	KY449050	cattle	WRLFMD	Nepal	ME-SA/Ind-2001/e
NEP/6/2016	KY449054	cattle	WRLFMD	Nepal	ME-SA/Ind-2001/e
NEP/13/2016	MG972561	cattle	WRLFMD	Nepal	ME-SA/Ind-2001/e
NEP/12/2016	MG972560	cattle	WRLFMD	Nepal	ME-SA/Ind-2001/e
BAN/SI/Sh-234/2015*	KY077610	cattle	Univ Dhaka	Bangladesh	ME-SA/Ind-2001/e
MUR/24/2016	MG972515	cattle	WRLFMD	Mauritius	ME-SA/Ind-2001/e
F2/ROD/2016*	n/a	bovine	ANSES	Mauritius	ME-SA/Ind-2001/e
MUR/21/2016	MG972512	cattle	WRLFMD	Mauritius	ME-SA/Ind-2001/e
MUR/23/2016	MG972514	cattle	WRLFMD	Mauritius	ME-SA/Ind-2001/e
MUR/22/2016	MG972513	cattle	WRLFMD	Mauritius	ME-SA/Ind-2001/e
F1/ROD/2016*	n/a	bovine	ANSES	Mauritius	ME-SA/Ind-2001/e
MUR/20/2016	MG972511	cattle	WRLFMD	Mauritius	ME-SA/Ind-2001/e
MUR/19/2016	MG972510	cattle	WRLFMD	Mauritius	ME-SA/Ind-2001/e
F3/ROD/2016*	n/a	bovine	ANSES	Mauritius	ME-SA/Ind-2001/e
MUR/17/2016	MG972508	cattle	WRLFMD	Mauritius	ME-SA/Ind-2001/e
MUR/4/2016	MG972496	cattle	WRLFMD	Mauritius	ME-SA/Ind-2001/e
3A/MAUR/2016*	n/a	bovine	ANSES	Mauritius	ME-SA/Ind-2001/e
3B/MAUR/2016*	n/a	bovine	ANSES	Mauritius	ME-SA/Ind-2001/e
MUR/2/2016	MG972494	cattle	WRLFMD	Mauritius	ME-SA/Ind-2001/e
MUR/16/2016	MG972507	cattle	WRLFMD	Mauritius	ME-SA/Ind-2001/e
MUR/6/2016	MG972498	cattle	WRLFMD	Mauritius	ME-SA/Ind-2001/e
MUR/13/2016	MG972504	cattle	WRLFMD	Mauritius	ME-SA/Ind-2001/e
MUR/5/2016	MG972497	cattle	WRLFMD	Mauritius	ME-SA/Ind-2001/e
NEP/17/2016	MG972563	cattle	WRLFMD	Nepal	ME-SA/Ind-2001/e
SAU/7/2016	MG972596	bovine	WRLFMD	Saudi Arabia	ME-SA/Ind-2001/e
BHU/3/2009	KM921814	cattle	WRLFMD	Bhutan	ME-SA/Ind-2001/d
UAE/4/2008	KM921876	gazelle	WRLFMD	United Arab Emirates	ME-SA/Ind-2001/c
OMN/7/2001	DQ164941	bovine	WRLFMD	Oman	ME-SA/Ind-2001/b
KUW/3/97	DQ164904	bovine	WRLFMD	Kuwait	ME-SA/Ind-2001/a
UKG/35/2001	AJ539141	porcine	PIADC	United Kingdom	ME-SA/PanAsia
IRN/6/2015	n/a	cattle	WRLFMD	Iran	ME-SA/PanAsia-2/QOM-15
IRN/31/2009	KY091284	cattle	WRLFMD	Iran	ME-SA/PanAsia-2/FAR-09
IRN/88/2009	KY091282	n/a	WRLFMD	Iran	ME-SA/PanAsia-2/ANT-10
Manisa/TUR/69*	AY593823	n/a	PIADC	Turkey	ME-SA
IND/53/79	AF292107	bovine	PD-FMD	India	ME-SA
TAI/189/87*	KY091288	bovine	TRRL	Thailand	SEA
ISA/1/62	AJ303500	n/a	WRLFMD	Indonesia	ISA-1

\*, not a WRLFMD Reference Number

n/a, not available