

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

## Genotyping Report

FMDV serotype: A  
Country: Iran  
Year: 2020, 2021  
Batch: WRLFMD/2021/00009  
No. of sequences: 18  
Report date: 17th August 2021  
Report generated by: Nick Knowles  
Report checked by: Hayley Hicks



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Virus sample name:	IRN/12/2020
Sender reference:	IR/1400/72
Location of origin:	Qazvin
Country of origin:	Iran
Date of collection:	26/10/2020
Host species:	bovine
Serotype:	A
Topotype:	ASIA
Lineage:	Iran-05
Sublineage:	FAR-11
Sequence length:	633
Ambiguities:	0
Material submitted for sequencing:	WRL-LFBK1
Harvest date of material:	15/07/2021
Primers:	A-1C562F/EUR-2B52R, FMD-3161F/FMD-4303R
Received for sequencing:	09/08/2021
Created:	17/08/2021
Last updated:	17/08/2021

VIBASys IDs: sample 48490, genome 48491, sequence viba\_48492, sequencing info 48493

### Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_48496	IRN/13/2020	bovine	100.0	0	A	ASIA	Iran-05	FAR-11
viba_45673	IRN/99486/2020	cattle	100.0	0	A	ASIA	Iran-05	FAR-11
viba_48512	IRN/1/2021	bovine	99.7	0	A	ASIA	Iran-05	FAR-11
viba_48504	IRN/20/2020	bovine	99.5	0	A	ASIA	Iran-05	FAR-11
viba_48508	IRN/23/2020	bovine	99.5	0	A	ASIA	Iran-05	FAR-11
viba_45677	IRN/994883/2020	cattle	99.4	0	A	ASIA	Iran-05	FAR-11
viba_48520	IRN/4/2021	bovine	99.4	0	A	ASIA	Iran-05	FAR-11
viba_48516	IRN/2/2021	bovine	99.2	0	A	ASIA	Iran-05	FAR-11
viba_48532	IRN/8/2021	bovine	99.2	0	A	ASIA	Iran-05	FAR-11
viba_48536	IRN/9/2021	bovine	99.2	0	A	ASIA	Iran-05	FAR-11

### Most Closely Related Prototype Sequences

see <http://www.wrlfmd.org/fmdv-genome/fmd-prototype-strains>

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_594	IRN/1/2011	bovine	94.2	0	A	ASIA	Iran-05	FAR-11
viba_10508	PAK/7/2008	water buffalo	93.2	0	A	ASIA	Iran-05	SIN-08
viba_414	AFG/6/2007	bovine	92.9	0	A	ASIA	Iran-05	AFG-07
viba_13615	IRN/134/2010	cattle	92.4	0	A	ASIA	Iran-05	HER-10
viba_557	IRN/15/2012	bovine	92.4	0	A	ASIA	Iran-05	SIS-12
viba_34671	BAL/PAK/05/2011	cattle	92.1	0	A	ASIA	Iran-05	BAL-11
viba_319	BAR/6/2008	bovine	92.1	0	A	ASIA	Iran-05	BAR-08
viba_636	IRN/78/2009		91.9	0	A	ASIA	Iran-05	FAR-09
viba_403	TUR/1/2008	cattle	91.6	0	A	ASIA	Iran-05	ARD-07
viba_133	IRN/1/2005	cattle	91.6	0	A	ASIA	Iran-05	

Virus sample name:	IRN/13/2020
Sender reference:	IR/1400/51
Location of origin:	Markazi
Country of origin:	Iran
Date of collection:	05/11/2020
Host species:	bovine
Serotype:	A
Topotype:	ASIA
Lineage:	Iran-05
Sublineage:	FAR-11
Sequence length:	633
Ambiguities:	0
Material submitted for sequencing:	WRL-LFBK1
Harvest date of material:	15/07/2021
Primers:	A-1C562F/EUR-2B52R, FMD-3161F/FMD-4303R
Received for sequencing:	09/08/2021
Created:	17/08/2021
Last updated:	17/08/2021

VIBASys IDs: sample 48494, genome 48495, sequence viba\_48496, sequencing info 48497

#### Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_48492	IRN/12/2020	bovine	100.0	0	A	ASIA	Iran-05	FAR-11
viba_45673	IRN/99486/2020	cattle	100.0	0	A	ASIA	Iran-05	FAR-11
viba_48512	IRN/1/2021	bovine	99.7	0	A	ASIA	Iran-05	FAR-11
viba_48504	IRN/20/2020	bovine	99.5	0	A	ASIA	Iran-05	FAR-11
viba_48508	IRN/23/2020	bovine	99.5	0	A	ASIA	Iran-05	FAR-11
viba_45677	IRN/994883/2020	cattle	99.4	0	A	ASIA	Iran-05	FAR-11
viba_48520	IRN/4/2021	bovine	99.4	0	A	ASIA	Iran-05	FAR-11
viba_48516	IRN/2/2021	bovine	99.2	0	A	ASIA	Iran-05	FAR-11
viba_48532	IRN/8/2021	bovine	99.2	0	A	ASIA	Iran-05	FAR-11
viba_48536	IRN/9/2021	bovine	99.2	0	A	ASIA	Iran-05	FAR-11

#### Most Closely Related Prototype Sequences

see <http://www.wrlfmd.org/fmdv-genome/fmd-prototype-strains>

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_594	IRN/1/2011	bovine	94.2	0	A	ASIA	Iran-05	FAR-11
viba_10508	PAK/7/2008	water buffalo	93.2	0	A	ASIA	Iran-05	SIN-08
viba_414	AFG/6/2007	bovine	92.9	0	A	ASIA	Iran-05	AFG-07
viba_13615	IRN/134/2010	cattle	92.4	0	A	ASIA	Iran-05	HER-10
viba_557	IRN/15/2012	bovine	92.4	0	A	ASIA	Iran-05	SIS-12
viba_34671	BAL/PAK/05/2011	cattle	92.1	0	A	ASIA	Iran-05	BAL-11
viba_319	BAR/6/2008	bovine	92.1	0	A	ASIA	Iran-05	BAR-08
viba_636	IRN/78/2009		91.9	0	A	ASIA	Iran-05	FAR-09
viba_403	TUR/1/2008	cattle	91.6	0	A	ASIA	Iran-05	ARD-07
viba_133	IRN/1/2005	cattle	91.6	0	A	ASIA	Iran-05	

Virus sample name:	IRN/18/2020
Sender reference:	IR/1400/58
Location of origin:	Lorestan
Country of origin:	Iran
Date of collection:	22/11/2020
Host species:	bovine
Serotype:	A
Topotype:	ASIA
Lineage:	Iran-05
Sublineage:	FAR-11
Sequence length:	633
Ambiguities:	0
Material submitted for sequencing:	WRL-LFBK1
Harvest date of material:	16/07/2021
Primers:	A-1C562F/EUR-2B52R, FMD-3161F/FMD-4303R
Received for sequencing:	09/08/2021
Created:	17/08/2021
Last updated:	17/08/2021
VIBASys IDs: sample 48498, genome 48499, sequence viba_48500, sequencing info 48501	

#### Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_45683	IRN/99127/2020	cattle	97.3	0	A	ASIA	Iran-05	FAR-11
viba_45686	IRN/991471/2020	cattle	97.3	0	A	ASIA	Iran-05	FAR-11
viba_48504	IRN/20/2020	bovine	97.3	0	A	ASIA	Iran-05	FAR-11
viba_48508	IRN/23/2020	bovine	97.3	0	A	ASIA	Iran-05	FAR-11
viba_45677	IRN/994883/2020	cattle	97.2	0	A	ASIA	Iran-05	FAR-11
viba_45665	IRN/99466/2020	cattle	97.2	0	A	ASIA	Iran-05	FAR-11
viba_48520	IRN/4/2021	bovine	97.2	0	A	ASIA	Iran-05	FAR-11
viba_48532	IRN/8/2021	bovine	97.0	0	A	ASIA	Iran-05	FAR-11
viba_45669	IRN/99483/2020	cattle	97.0	0	A	ASIA	Iran-05	FAR-11
viba_48536	IRN/9/2021	bovine	97.0	0	A	ASIA	Iran-05	FAR-11

#### Most Closely Related Prototype Sequences

see <http://www.wrlfmd.org/fmdv-genome/fmd-prototype-strains>

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_594	IRN/1/2011	bovine	94.2	0	A	ASIA	Iran-05	FAR-11
viba_414	AFG/6/2007	bovine	92.9	0	A	ASIA	Iran-05	AFG-07
viba_10508	PAK/7/2008	water buffalo	92.9	0	A	ASIA	Iran-05	SIN-08
viba_13615	IRN/134/2010	cattle	92.4	0	A	ASIA	Iran-05	HER-10
viba_636	IRN/78/2009		92.3	0	A	ASIA	Iran-05	FAR-09
viba_557	IRN/15/2012	bovine	92.3	0	A	ASIA	Iran-05	SIS-12
viba_133	IRN/1/2005	cattle	91.9	0	A	ASIA	Iran-05	
viba_319	BAR/6/2008	bovine	91.9	0	A	ASIA	Iran-05	BAR-08
viba_34671	BAL/PAK/05/2011	cattle	91.8	0	A	ASIA	Iran-05	BAL-11
viba_34487	SAR/AFG/L1435/2009	cattle	91.8	0	A	ASIA	Iran-05	SAR-09

Virus sample name:	IRN/20/2020
Sender reference:	IR/1400/63
Location of origin:	Qom
Country of origin:	Iran
Date of collection:	05/12/2020
Host species:	bovine
Serotype:	A
Topotype:	ASIA
Lineage:	Iran-05
Sublineage:	FAR-11
Sequence length:	633
Ambiguities:	0
Material submitted for sequencing:	WRL-LFBK1
Harvest date of material:	16/07/2021
Primers:	A-1C562F/EUR-2B52R, FMD-3161F/FMD-4303R
Received for sequencing:	09/08/2021
Created:	17/08/2021
Last updated:	17/08/2021

VIBASys IDs: sample 48502, genome 48503, sequence viba\_48504, sequencing info 48505

#### Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_48508	IRN/23/2020	bovine	100.0	0	A	ASIA	Iran-05	FAR-11
viba_45677	IRN/994883/2020	cattle	99.8	0	A	ASIA	Iran-05	FAR-11
viba_48520	IRN/4/2021	bovine	99.8	0	A	ASIA	Iran-05	FAR-11
viba_48532	IRN/8/2021	bovine	99.7	0	A	ASIA	Iran-05	FAR-11
viba_48536	IRN/9/2021	bovine	99.7	0	A	ASIA	Iran-05	FAR-11
viba_45686	IRN/991471/2020	cattle	99.7	0	A	ASIA	Iran-05	FAR-11
viba_48524	IRN/5/2021	bovine	99.7	0	A	ASIA	Iran-05	FAR-11
viba_48492	IRN/12/2020	bovine	99.5	0	A	ASIA	Iran-05	FAR-11
viba_48496	IRN/13/2020	bovine	99.5	0	A	ASIA	Iran-05	FAR-11
viba_45665	IRN/99466/2020	cattle	99.5	0	A	ASIA	Iran-05	FAR-11

#### Most Closely Related Prototype Sequences

see <http://www.wrlfmd.org/fmdv-genome/fmd-prototype-strains>

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_594	IRN/1/2011	bovine	94.3	0	A	ASIA	Iran-05	FAR-11
viba_10508	PAK/7/2008	water buffalo	93.7	0	A	ASIA	Iran-05	SIN-08
viba_414	AFG/6/2007	bovine	93.4	0	A	ASIA	Iran-05	AFG-07
viba_13615	IRN/134/2010	cattle	92.9	0	A	ASIA	Iran-05	HER-10
viba_557	IRN/15/2012	bovine	92.9	0	A	ASIA	Iran-05	SIS-12
viba_34671	BAL/PAK/05/2011	cattle	92.6	0	A	ASIA	Iran-05	BAL-11
viba_636	IRN/78/2009		92.4	0	A	ASIA	Iran-05	FAR-09
viba_319	BAR/6/2008	bovine	92.3	0	A	ASIA	Iran-05	BAR-08
viba_133	IRN/1/2005	cattle	92.1	0	A	ASIA	Iran-05	
viba_403	TUR/1/2008	cattle	91.8	0	A	ASIA	Iran-05	ARD-07

Virus sample name:	IRN/23/2020
Sender reference:	IR/1400/64
Location of origin:	Qom
Country of origin:	Iran
Date of collection:	13/12/2020
Host species:	bovine
Serotype:	A
Topotype:	ASIA
Lineage:	Iran-05
Sublineage:	FAR-11
Sequence length:	633
Ambiguities:	0
Material submitted for sequencing:	WRL-LFBK1
Harvest date of material:	20/07/2021
Primers:	A-1C562F/EUR-2B52R, FMD-3161F/FMD-4303R
Received for sequencing:	09/08/2021
Created:	17/08/2021
Last updated:	17/08/2021

VIBASys IDs: sample 48506, genome 48507, sequence viba\_48508, sequencing info 48509

### Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_48504	IRN/20/2020	bovine	100.0	0	A	ASIA	Iran-05	FAR-11
viba_45677	IRN/994883/2020	cattle	99.8	0	A	ASIA	Iran-05	FAR-11
viba_48520	IRN/4/2021	bovine	99.8	0	A	ASIA	Iran-05	FAR-11
viba_48532	IRN/8/2021	bovine	99.7	0	A	ASIA	Iran-05	FAR-11
viba_48536	IRN/9/2021	bovine	99.7	0	A	ASIA	Iran-05	FAR-11
viba_45686	IRN/991471/2020	cattle	99.7	0	A	ASIA	Iran-05	FAR-11
viba_48524	IRN/5/2021	bovine	99.7	0	A	ASIA	Iran-05	FAR-11
viba_48492	IRN/12/2020	bovine	99.5	0	A	ASIA	Iran-05	FAR-11
viba_48496	IRN/13/2020	bovine	99.5	0	A	ASIA	Iran-05	FAR-11
viba_45665	IRN/99466/2020	cattle	99.5	0	A	ASIA	Iran-05	FAR-11

### Most Closely Related Prototype Sequences

see <http://www.wrlfmd.org/fmdv-genome/fmd-prototype-strains>

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_594	IRN/1/2011	bovine	94.3	0	A	ASIA	Iran-05	FAR-11
viba_10508	PAK/7/2008	water buffalo	93.7	0	A	ASIA	Iran-05	SIN-08
viba_414	AFG/6/2007	bovine	93.4	0	A	ASIA	Iran-05	AFG-07
viba_13615	IRN/134/2010	cattle	92.9	0	A	ASIA	Iran-05	HER-10
viba_557	IRN/15/2012	bovine	92.9	0	A	ASIA	Iran-05	SIS-12
viba_34671	BAL/PAK/05/2011	cattle	92.6	0	A	ASIA	Iran-05	BAL-11
viba_636	IRN/78/2009		92.4	0	A	ASIA	Iran-05	FAR-09
viba_319	BAR/6/2008	bovine	92.3	0	A	ASIA	Iran-05	BAR-08
viba_133	IRN/1/2005	cattle	92.1	0	A	ASIA	Iran-05	
viba_403	TUR/1/2008	cattle	91.8	0	A	ASIA	Iran-05	ARD-07

Virus sample name:	IRN/1/2021
Sender reference:	IR/1400/54
Location of origin:	Zanjan
Country of origin:	Iran
Date of collection:	07/01/2021
Host species:	bovine
Serotype:	A
Topotype:	ASIA
Lineage:	Iran-05
Sublineage:	FAR-11
Sequence length:	633
Ambiguities:	0
Material submitted for sequencing:	WRL-LFBK1
Harvest date of material:	21/07/2021
Primers:	A-1C562F/EUR-2B52R, FMD-3161F/FMD-4303R
Received for sequencing:	09/08/2021
Created:	17/08/2021
Last updated:	17/08/2021

VIBASys IDs: sample 48510, genome 48511, sequence viba\_48512, sequencing info 48513

#### Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_48492	IRN/12/2020	bovine	99.7	0	A	ASIA	Iran-05	FAR-11
viba_48496	IRN/13/2020	bovine	99.7	0	A	ASIA	Iran-05	FAR-11
viba_45673	IRN/99486/2020	cattle	99.7	0	A	ASIA	Iran-05	FAR-11
viba_48516	IRN/2/2021	bovine	99.2	0	A	ASIA	Iran-05	FAR-11
viba_48504	IRN/20/2020	bovine	99.2	0	A	ASIA	Iran-05	FAR-11
viba_48508	IRN/23/2020	bovine	99.2	0	A	ASIA	Iran-05	FAR-11
viba_45677	IRN/994883/2020	cattle	99.1	0	A	ASIA	Iran-05	FAR-11
viba_48528	IRN/6/2021	bovine	99.1	0	A	ASIA	Iran-05	FAR-11
viba_48520	IRN/4/2021	bovine	99.1	0	A	ASIA	Iran-05	FAR-11
viba_48532	IRN/8/2021	bovine	98.9	0	A	ASIA	Iran-05	FAR-11

#### Most Closely Related Prototype Sequences

see <http://www.wrlfmd.org/fmdv-genome/fmd-prototype-strains>

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_594	IRN/1/2011	bovine	93.8	0	A	ASIA	Iran-05	FAR-11
viba_10508	PAK/7/2008	water buffalo	92.9	0	A	ASIA	Iran-05	SIN-08
viba_414	AFG/6/2007	bovine	92.6	0	A	ASIA	Iran-05	AFG-07
viba_34671	BAL/PAK/05/2011	cattle	92.1	0	A	ASIA	Iran-05	BAL-11
viba_13615	IRN/134/2010	cattle	92.1	0	A	ASIA	Iran-05	HER-10
viba_557	IRN/15/2012	bovine	92.1	0	A	ASIA	Iran-05	SIS-12
viba_319	BAR/6/2008	bovine	91.8	0	A	ASIA	Iran-05	BAR-08
viba_636	IRN/78/2009		91.6	0	A	ASIA	Iran-05	FAR-09
viba_403	TUR/1/2008	cattle	91.3	0	A	ASIA	Iran-05	ARD-07
viba_133	IRN/1/2005	cattle	91.3	0	A	ASIA	Iran-05	

Virus sample name:	IRN/2/2021
Sender reference:	IR/1400/50
Location of origin:	Gilan
Country of origin:	Iran
Date of collection:	14/01/2021
Host species:	bovine
Serotype:	A
Topotype:	ASIA
Lineage:	Iran-05
Sublineage:	FAR-11
Sequence length:	633
Ambiguities:	0
Material submitted for sequencing:	WRL-LFBK1
Harvest date of material:	20/07/2021
Primers:	A-1C562F/EUR-2B52R, FMD-3161F/FMD-4303R
Received for sequencing:	09/08/2021
Created:	17/08/2021
Last updated:	17/08/2021

VIBASys IDs: sample 48514, genome 48515, sequence viba\_48516, sequencing info 48517

#### Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_45677	IRN/994883/2020	cattle	99.5	0	A	ASIA	Iran-05	FAR-11
viba_48528	IRN/6/2021	bovine	99.5	0	A	ASIA	Iran-05	FAR-11
viba_48536	IRN/9/2021	bovine	99.4	0	A	ASIA	Iran-05	FAR-11
viba_48524	IRN/5/2021	bovine	99.4	0	A	ASIA	Iran-05	FAR-11
viba_48504	IRN/20/2020	bovine	99.4	0	A	ASIA	Iran-05	FAR-11
viba_48508	IRN/23/2020	bovine	99.4	0	A	ASIA	Iran-05	FAR-11
viba_48492	IRN/12/2020	bovine	99.2	0	A	ASIA	Iran-05	FAR-11
viba_48556	IRN/23/2021	bovine	99.2	0	A	ASIA	Iran-05	FAR-11
viba_48496	IRN/13/2020	bovine	99.2	0	A	ASIA	Iran-05	FAR-11
viba_48512	IRN/1/2021	bovine	99.2	0	A	ASIA	Iran-05	FAR-11

#### Most Closely Related Prototype Sequences

see <http://www.wrlfmd.org/fmdv-genome/fmd-prototype-strains>

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_594	IRN/1/2011	bovine	94.0	0	A	ASIA	Iran-05	FAR-11
viba_10508	PAK/7/2008	water buffalo	93.0	0	A	ASIA	Iran-05	SIN-08
viba_414	AFG/6/2007	bovine	92.7	0	A	ASIA	Iran-05	AFG-07
viba_13615	IRN/134/2010	cattle	92.3	0	A	ASIA	Iran-05	HER-10
viba_557	IRN/15/2012	bovine	92.3	0	A	ASIA	Iran-05	SIS-12
viba_319	BAR/6/2008	bovine	92.3	0	A	ASIA	Iran-05	BAR-08
viba_34671	BAL/PAK/05/2011	cattle	91.9	0	A	ASIA	Iran-05	BAL-11
viba_636	IRN/78/2009		91.8	0	A	ASIA	Iran-05	FAR-09
viba_133	IRN/1/2005	cattle	91.8	0	A	ASIA	Iran-05	
viba_403	TUR/1/2008	cattle	91.5	0	A	ASIA	Iran-05	ARD-07



Virus sample name:	IRN/4/2021
Sender reference:	IR/1400/49
Location of origin:	East Azerbaijan
Country of origin:	Iran
Date of collection:	21/01/2021
Host species:	bovine
Serotype:	A
Topotype:	ASIA
Lineage:	Iran-05
Sublineage:	FAR-11
Sequence length:	633
Ambiguities:	0
Material submitted for sequencing:	WRL-LFBK1
Harvest date of material:	21/07/2021
Primers:	A-1C562F/EUR-2B52R, FMD-3161F/FMD-4303R
Received for sequencing:	09/08/2021
Created:	17/08/2021
Last updated:	17/08/2021
VIBASys IDs: sample 48518, genome 48519, sequence viba_48520, sequencing info 48521	

#### Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_48532	IRN/8/2021	bovine	99.8	0	A	ASIA	Iran-05	FAR-11
viba_48504	IRN/20/2020	bovine	99.8	0	A	ASIA	Iran-05	FAR-11
viba_48508	IRN/23/2020	bovine	99.8	0	A	ASIA	Iran-05	FAR-11
viba_45677	IRN/994883/2020	cattle	99.7	0	A	ASIA	Iran-05	FAR-11
viba_48536	IRN/9/2021	bovine	99.5	0	A	ASIA	Iran-05	FAR-11
viba_45686	IRN/991471/2020	cattle	99.5	0	A	ASIA	Iran-05	FAR-11
viba_48524	IRN/5/2021	bovine	99.5	0	A	ASIA	Iran-05	FAR-11
viba_48492	IRN/12/2020	bovine	99.4	0	A	ASIA	Iran-05	FAR-11
viba_48496	IRN/13/2020	bovine	99.4	0	A	ASIA	Iran-05	FAR-11
viba_45665	IRN/99466/2020	cattle	99.4	0	A	ASIA	Iran-05	FAR-11

#### Most Closely Related Prototype Sequences

see <http://www.wrlfmd.org/fmdv-genome/fmd-prototype-strains>

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_594	IRN/1/2011	bovine	94.2	0	A	ASIA	Iran-05	FAR-11
viba_10508	PAK/7/2008	water buffalo	93.5	0	A	ASIA	Iran-05	SIN-08
viba_414	AFG/6/2007	bovine	93.2	0	A	ASIA	Iran-05	AFG-07
viba_13615	IRN/134/2010	cattle	92.7	0	A	ASIA	Iran-05	HER-10
viba_557	IRN/15/2012	bovine	92.7	0	A	ASIA	Iran-05	SIS-12
viba_34671	BAL/PAK/05/2011	cattle	92.4	0	A	ASIA	Iran-05	BAL-11
viba_636	IRN/78/2009		92.3	0	A	ASIA	Iran-05	FAR-09
viba_319	BAR/6/2008	bovine	92.1	0	A	ASIA	Iran-05	BAR-08
viba_403	TUR/1/2008	cattle	91.9	0	A	ASIA	Iran-05	ARD-07
viba_133	IRN/1/2005	cattle	91.9	0	A	ASIA	Iran-05	

Virus sample name:	IRN/5/2021
Sender reference:	IR/1400/48
Location of origin:	Kermanshah
Country of origin:	Iran
Date of collection:	26/01/2021
Host species:	bovine
Serotype:	A
Topotype:	ASIA
Lineage:	Iran-05
Sublineage:	FAR-11
Sequence length:	633
Ambiguities:	0
Material submitted for sequencing:	WRL-LFBK1
Harvest date of material:	21/07/2021
Primers:	A-1C562F/EUR-2B52R, FMD-3161F/FMD-4303R
Received for sequencing:	09/08/2021
Created:	17/08/2021
Last updated:	17/08/2021

VIBASys IDs: sample 48522, genome 48523, sequence viba\_48524, sequencing info 48525

#### Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_45677	IRN/994883/2020	cattle	99.8	0	A	ASIA	Iran-05	FAR-11
viba_48536	IRN/9/2021	bovine	99.7	0	A	ASIA	Iran-05	FAR-11
viba_48504	IRN/20/2020	bovine	99.7	0	A	ASIA	Iran-05	FAR-11
viba_48508	IRN/23/2020	bovine	99.7	0	A	ASIA	Iran-05	FAR-11
viba_48520	IRN/4/2021	bovine	99.5	0	A	ASIA	Iran-05	FAR-11
viba_48516	IRN/2/2021	bovine	99.4	0	A	ASIA	Iran-05	FAR-11
viba_48532	IRN/8/2021	bovine	99.4	0	A	ASIA	Iran-05	FAR-11
viba_45686	IRN/991471/2020	cattle	99.4	0	A	ASIA	Iran-05	FAR-11
viba_48492	IRN/12/2020	bovine	99.2	0	A	ASIA	Iran-05	FAR-11
viba_48556	IRN/23/2021	bovine	99.2	0	A	ASIA	Iran-05	FAR-11

#### Most Closely Related Prototype Sequences

see <http://www.wrlfmd.org/fmdv-genome/fmd-prototype-strains>

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_594	IRN/1/2011	bovine	94.0	0	A	ASIA	Iran-05	FAR-11
viba_10508	PAK/7/2008	water buffalo	93.4	0	A	ASIA	Iran-05	SIN-08
viba_414	AFG/6/2007	bovine	93.0	0	A	ASIA	Iran-05	AFG-07
viba_13615	IRN/134/2010	cattle	92.6	0	A	ASIA	Iran-05	HER-10
viba_557	IRN/15/2012	bovine	92.6	0	A	ASIA	Iran-05	SIS-12
viba_34671	BAL/PAK/05/2011	cattle	92.3	0	A	ASIA	Iran-05	BAL-11
viba_319	BAR/6/2008	bovine	92.3	0	A	ASIA	Iran-05	BAR-08
viba_636	IRN/78/2009		92.1	0	A	ASIA	Iran-05	FAR-09
viba_133	IRN/1/2005	cattle	92.1	0	A	ASIA	Iran-05	
viba_403	TUR/1/2008	cattle	91.5	0	A	ASIA	Iran-05	ARD-07

Virus sample name:	IRN/6/2021
Sender reference:	IR/1400/45
Location of origin:	Zanjan
Country of origin:	Iran
Date of collection:	03/02/2021
Host species:	bovine
Serotype:	A
Topotype:	ASIA
Lineage:	Iran-05
Sublineage:	FAR-11
Sequence length:	633
Ambiguities:	0
Material submitted for sequencing:	WRL-LFBK1
Harvest date of material:	21/07/2021
Primers:	A-1C562F/EUR-2B52R, FMD-3161F/FMD-4303R
Received for sequencing:	09/08/2021
Created:	17/08/2021
Last updated:	17/08/2021

VIBASys IDs: sample 48526, genome 48527, sequence viba\_48528, sequencing info 48529

#### Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_48516	IRN/2/2021	bovine	99.5	0	A	ASIA	Iran-05	FAR-11
viba_45677	IRN/994883/2020	cattle	99.4	0	A	ASIA	Iran-05	FAR-11
viba_48536	IRN/9/2021	bovine	99.2	0	A	ASIA	Iran-05	FAR-11
viba_48524	IRN/5/2021	bovine	99.2	0	A	ASIA	Iran-05	FAR-11
viba_48504	IRN/20/2020	bovine	99.2	0	A	ASIA	Iran-05	FAR-11
viba_48508	IRN/23/2020	bovine	99.2	0	A	ASIA	Iran-05	FAR-11
viba_48492	IRN/12/2020	bovine	99.1	0	A	ASIA	Iran-05	FAR-11
viba_48496	IRN/13/2020	bovine	99.1	0	A	ASIA	Iran-05	FAR-11
viba_48512	IRN/1/2021	bovine	99.1	0	A	ASIA	Iran-05	FAR-11
viba_45673	IRN/99486/2020	cattle	99.1	0	A	ASIA	Iran-05	FAR-11

#### Most Closely Related Prototype Sequences

see <http://www.wrlfmd.org/fmdv-genome/fmd-prototype-strains>

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_594	IRN/1/2011	bovine	93.8	0	A	ASIA	Iran-05	FAR-11
viba_10508	PAK/7/2008	water buffalo	93.0	0	A	ASIA	Iran-05	SIN-08
viba_414	AFG/6/2007	bovine	92.7	0	A	ASIA	Iran-05	AFG-07
viba_13615	IRN/134/2010	cattle	92.3	0	A	ASIA	Iran-05	HER-10
viba_557	IRN/15/2012	bovine	92.3	0	A	ASIA	Iran-05	SIS-12
viba_319	BAR/6/2008	bovine	92.3	0	A	ASIA	Iran-05	BAR-08
viba_34671	BAL/PAK/05/2011	cattle	91.9	0	A	ASIA	Iran-05	BAL-11
viba_636	IRN/78/2009		91.8	0	A	ASIA	Iran-05	FAR-09
viba_133	IRN/1/2005	cattle	91.8	0	A	ASIA	Iran-05	
viba_403	TUR/1/2008	cattle	91.5	0	A	ASIA	Iran-05	ARD-07

Virus sample name:	IRN/8/2021
Sender reference:	IR/1400/46
Location of origin:	Tehran
Country of origin:	Iran
Date of collection:	09/02/2021
Host species:	bovine
Serotype:	A
Topotype:	ASIA
Lineage:	Iran-05
Sublineage:	FAR-11
Sequence length:	633
Ambiguities:	0
Material submitted for sequencing:	WRL-LFBK1
Harvest date of material:	22/07/2021
Primers:	A-1C562F/EUR-2B52R, FMD-3161F/FMD-4303R
Received for sequencing:	09/08/2021
Created:	17/08/2021
Last updated:	17/08/2021

VIBASys IDs: sample 48530, genome 48531, sequence viba\_48532, sequencing info 48533

### Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_48520	IRN/4/2021	bovine	99.8	0	A	ASIA	Iran-05	FAR-11
viba_48504	IRN/20/2020	bovine	99.7	0	A	ASIA	Iran-05	FAR-11
viba_48508	IRN/23/2020	bovine	99.7	0	A	ASIA	Iran-05	FAR-11
viba_45677	IRN/994883/2020	cattle	99.5	0	A	ASIA	Iran-05	FAR-11
viba_48536	IRN/9/2021	bovine	99.4	0	A	ASIA	Iran-05	FAR-11
viba_45686	IRN/991471/2020	cattle	99.4	0	A	ASIA	Iran-05	FAR-11
viba_48524	IRN/5/2021	bovine	99.4	0	A	ASIA	Iran-05	FAR-11
viba_48492	IRN/12/2020	bovine	99.2	0	A	ASIA	Iran-05	FAR-11
viba_48496	IRN/13/2020	bovine	99.2	0	A	ASIA	Iran-05	FAR-11
viba_45665	IRN/99466/2020	cattle	99.2	0	A	ASIA	Iran-05	FAR-11

### Most Closely Related Prototype Sequences

see <http://www.wrlfmd.org/fmdv-genome/fmd-prototype-strains>

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_594	IRN/1/2011	bovine	94.0	0	A	ASIA	Iran-05	FAR-11
viba_10508	PAK/7/2008	water buffalo	93.4	0	A	ASIA	Iran-05	SIN-08
viba_414	AFG/6/2007	bovine	93.0	0	A	ASIA	Iran-05	AFG-07
viba_34671	BAL/PAK/05/2011	cattle	92.6	0	A	ASIA	Iran-05	BAL-11
viba_13615	IRN/134/2010	cattle	92.6	0	A	ASIA	Iran-05	HER-10
viba_557	IRN/15/2012	bovine	92.6	0	A	ASIA	Iran-05	SIS-12
viba_636	IRN/78/2009		92.1	0	A	ASIA	Iran-05	FAR-09
viba_319	BAR/6/2008	bovine	91.9	0	A	ASIA	Iran-05	BAR-08
viba_403	TUR/1/2008	cattle	91.8	0	A	ASIA	Iran-05	ARD-07
viba_133	IRN/1/2005	cattle	91.8	0	A	ASIA	Iran-05	

Virus sample name:	IRN/9/2021
Sender reference:	IR/1400/44
Location of origin:	West Azerbaijan
Country of origin:	Iran
Date of collection:	11/02/2021
Host species:	bovine
Serotype:	A
Topotype:	ASIA
Lineage:	Iran-05
Sublineage:	FAR-11
Sequence length:	633
Ambiguities:	0
Material submitted for sequencing:	WRL-LFBK2
Harvest date of material:	24/07/2021
Primers:	A-1C562F/EUR-2B52R, FMD-3161F/FMD-4303R
Received for sequencing:	09/08/2021
Created:	17/08/2021
Last updated:	17/08/2021
VIBASys IDs: sample 48534, genome 48535, sequence viba_48536, sequencing info 48537	

#### Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_45677	IRN/994883/2020	cattle	99.8	0	A	ASIA	Iran-05	FAR-11
viba_48524	IRN/5/2021	bovine	99.7	0	A	ASIA	Iran-05	FAR-11
viba_48504	IRN/20/2020	bovine	99.7	0	A	ASIA	Iran-05	FAR-11
viba_48508	IRN/23/2020	bovine	99.7	0	A	ASIA	Iran-05	FAR-11
viba_48520	IRN/4/2021	bovine	99.5	0	A	ASIA	Iran-05	FAR-11
viba_48516	IRN/2/2021	bovine	99.4	0	A	ASIA	Iran-05	FAR-11
viba_48532	IRN/8/2021	bovine	99.4	0	A	ASIA	Iran-05	FAR-11
viba_45686	IRN/991471/2020	cattle	99.4	0	A	ASIA	Iran-05	FAR-11
viba_48492	IRN/12/2020	bovine	99.2	0	A	ASIA	Iran-05	FAR-11
viba_48556	IRN/23/2021	bovine	99.2	0	A	ASIA	Iran-05	FAR-11

#### Most Closely Related Prototype Sequences

see <http://www.wrlfmd.org/fmdv-genome/fmd-prototype-strains>

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_594	IRN/1/2011	bovine	94.0	0	A	ASIA	Iran-05	FAR-11
viba_10508	PAK/7/2008	water buffalo	93.4	0	A	ASIA	Iran-05	SIN-08
viba_414	AFG/6/2007	bovine	93.0	0	A	ASIA	Iran-05	AFG-07
viba_13615	IRN/134/2010	cattle	92.6	0	A	ASIA	Iran-05	HER-10
viba_557	IRN/15/2012	bovine	92.6	0	A	ASIA	Iran-05	SIS-12
viba_34671	BAL/PAK/05/2011	cattle	92.3	0	A	ASIA	Iran-05	BAL-11
viba_319	BAR/6/2008	bovine	92.3	0	A	ASIA	Iran-05	BAR-08
viba_636	IRN/78/2009		92.1	0	A	ASIA	Iran-05	FAR-09
viba_133	IRN/1/2005	cattle	92.1	0	A	ASIA	Iran-05	
viba_403	TUR/1/2008	cattle	91.5	0	A	ASIA	Iran-05	ARD-07

Virus sample name:	IRN/15/2021
Sender reference:	IR/1400/38
Location of origin:	Semnan
Country of origin:	Iran
Date of collection:	07/04/2021
Host species:	bovine
Serotype:	A
Topotype:	ASIA
Lineage:	Iran-05
Sublineage:	FAR-11
Sequence length:	633
Ambiguities:	0
Material submitted for sequencing:	WRL-LFBK2
Harvest date of material:	24/07/2021
Primers:	A-1C562F/EUR-2B52R, FMD-3161F/FMD-4303R
Received for sequencing:	09/08/2021
Created:	17/08/2021
Last updated:	17/08/2021

VIBASys IDs: sample 48538, genome 48539, sequence viba\_48540, sequencing info 48541

#### Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_48552	IRN/22/2021	bovine	99.1	0	A	ASIA	Iran-05	FAR-11
viba_45686	IRN/991471/2020	cattle	97.5	0	A	ASIA	Iran-05	FAR-11
viba_48504	IRN/20/2020	bovine	97.5	0	A	ASIA	Iran-05	FAR-11
viba_48508	IRN/23/2020	bovine	97.5	0	A	ASIA	Iran-05	FAR-11
viba_45677	IRN/994883/2020	cattle	97.3	0	A	ASIA	Iran-05	FAR-11
viba_45665	IRN/99466/2020	cattle	97.3	0	A	ASIA	Iran-05	FAR-11
viba_48520	IRN/4/2021	bovine	97.3	0	A	ASIA	Iran-05	FAR-11
viba_48532	IRN/8/2021	bovine	97.2	0	A	ASIA	Iran-05	FAR-11
viba_45669	IRN/99483/2020	cattle	97.2	0	A	ASIA	Iran-05	FAR-11
viba_48536	IRN/9/2021	bovine	97.2	0	A	ASIA	Iran-05	FAR-11

#### Most Closely Related Prototype Sequences

see <http://www.wrlfmd.org/fmdv-genome/fmd-prototype-strains>

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_594	IRN/1/2011	bovine	94.0	0	A	ASIA	Iran-05	FAR-11
viba_10508	PAK/7/2008	water buffalo	92.7	0	A	ASIA	Iran-05	SIN-08
viba_414	AFG/6/2007	bovine	92.6	0	A	ASIA	Iran-05	AFG-07
viba_636	IRN/78/2009		92.3	0	A	ASIA	Iran-05	FAR-09
viba_319	BAR/6/2008	bovine	92.3	0	A	ASIA	Iran-05	BAR-08
viba_13615	IRN/134/2010	cattle	92.1	0	A	ASIA	Iran-05	HER-10
viba_133	IRN/1/2005	cattle	91.8	0	A	ASIA	Iran-05	
viba_557	IRN/15/2012	bovine	91.8	0	A	ASIA	Iran-05	SIS-12
viba_34671	BAL/PAK/05/2011	cattle	91.6	0	A	ASIA	Iran-05	BAL-11
viba_403	TUR/1/2008	cattle	91.2	0	A	ASIA	Iran-05	ARD-07

Virus sample name:	IRN/16/2021
Sender reference:	IR/1400/35
Location of origin:	East Azerbaijan
Country of origin:	Iran
Date of collection:	18/04/2021
Host species:	bovine
Serotype:	A
Topotype:	ASIA
Lineage:	Iran-05
Sublineage:	FAR-11
Sequence length:	633
Ambiguities:	0
Material submitted for sequencing:	WRL-LFBK1
Harvest date of material:	22/07/2021
Primers:	A-1C562F/EUR-2B52R, FMD-3161F/FMD-4303R
Received for sequencing:	09/08/2021
Created:	17/08/2021
Last updated:	17/08/2021
VIBASys IDs: sample 48542, genome 48543, sequence viba_48544, sequencing info 48545	

#### Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_48520	IRN/4/2021	bovine	99.2	0	A	ASIA	Iran-05	FAR-11
viba_48532	IRN/8/2021	bovine	99.1	0	A	ASIA	Iran-05	FAR-11
viba_48504	IRN/20/2020	bovine	99.1	0	A	ASIA	Iran-05	FAR-11
viba_48508	IRN/23/2020	bovine	99.1	0	A	ASIA	Iran-05	FAR-11
viba_45677	IRN/994883/2020	cattle	98.9	0	A	ASIA	Iran-05	FAR-11
viba_48536	IRN/9/2021	bovine	98.7	0	A	ASIA	Iran-05	FAR-11
viba_45686	IRN/991471/2020	cattle	98.7	0	A	ASIA	Iran-05	FAR-11
viba_48524	IRN/5/2021	bovine	98.7	0	A	ASIA	Iran-05	FAR-11
viba_48492	IRN/12/2020	bovine	98.6	0	A	ASIA	Iran-05	FAR-11
viba_48496	IRN/13/2020	bovine	98.6	0	A	ASIA	Iran-05	FAR-11

#### Most Closely Related Prototype Sequences

see <http://www.wrlfmd.org/fmdv-genome/fmd-prototype-strains>

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_594	IRN/1/2011	bovine	94.0	0	A	ASIA	Iran-05	FAR-11
viba_10508	PAK/7/2008	water buffalo	93.4	0	A	ASIA	Iran-05	SIN-08
viba_414	AFG/6/2007	bovine	93.0	0	A	ASIA	Iran-05	AFG-07
viba_13615	IRN/134/2010	cattle	92.6	0	A	ASIA	Iran-05	HER-10
viba_557	IRN/15/2012	bovine	92.6	0	A	ASIA	Iran-05	SIS-12
viba_34671	BAL/PAK/05/2011	cattle	92.3	0	A	ASIA	Iran-05	BAL-11
viba_319	BAR/6/2008	bovine	92.3	0	A	ASIA	Iran-05	BAR-08
viba_636	IRN/78/2009		92.1	0	A	ASIA	Iran-05	FAR-09
viba_403	TUR/1/2008	cattle	91.8	0	A	ASIA	Iran-05	ARD-07
viba_133	IRN/1/2005	cattle	91.8	0	A	ASIA	Iran-05	

Virus sample name:	IRN/18/2021
Sender reference:	IR/1400/34
Location of origin:	Qom
Country of origin:	Iran
Date of collection:	24/04/2021
Host species:	bovine
Serotype:	A
Topotype:	ASIA
Lineage:	Iran-05
Sublineage:	FAR-11
Sequence length:	633
Ambiguities:	0
Material submitted for sequencing:	WRL-LFBK1
Harvest date of material:	22/07/2021
Primers:	A-1C562F/EUR-2B52R, FMD-3161F/FMD-4303R
Received for sequencing:	09/08/2021
Created:	17/08/2021
Last updated:	17/08/2021

VIBASys IDs: sample 48546, genome 48547, sequence viba\_48548, sequencing info 48549

#### Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_45686	IRN/991471/2020	cattle	97.2	0	A	ASIA	Iran-05	FAR-11
viba_48504	IRN/20/2020	bovine	97.2	0	A	ASIA	Iran-05	FAR-11
viba_48508	IRN/23/2020	bovine	97.2	0	A	ASIA	Iran-05	FAR-11
viba_45677	IRN/994883/2020	cattle	97.0	0	A	ASIA	Iran-05	FAR-11
viba_45665	IRN/99466/2020	cattle	97.0	0	A	ASIA	Iran-05	FAR-11
viba_48520	IRN/4/2021	bovine	97.0	0	A	ASIA	Iran-05	FAR-11
viba_48532	IRN/8/2021	bovine	96.8	0	A	ASIA	Iran-05	FAR-11
viba_45669	IRN/99483/2020	cattle	96.8	0	A	ASIA	Iran-05	FAR-11
viba_48536	IRN/9/2021	bovine	96.8	0	A	ASIA	Iran-05	FAR-11
viba_48524	IRN/5/2021	bovine	96.8	0	A	ASIA	Iran-05	FAR-11

#### Most Closely Related Prototype Sequences

see <http://www.wrlfmd.org/fmdv-genome/fmd-prototype-strains>

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_594	IRN/1/2011	bovine	93.4	0	A	ASIA	Iran-05	FAR-11
viba_10508	PAK/7/2008	water buffalo	92.4	0	A	ASIA	Iran-05	SIN-08
viba_414	AFG/6/2007	bovine	92.1	0	A	ASIA	Iran-05	AFG-07
viba_557	IRN/15/2012	bovine	92.1	0	A	ASIA	Iran-05	SIS-12
viba_34671	BAL/PAK/05/2011	cattle	91.6	0	A	ASIA	Iran-05	BAL-11
viba_13615	IRN/134/2010	cattle	91.6	0	A	ASIA	Iran-05	HER-10
viba_636	IRN/78/2009		91.5	0	A	ASIA	Iran-05	FAR-09
viba_133	IRN/1/2005	cattle	91.5	0	A	ASIA	Iran-05	
viba_319	BAR/6/2008	bovine	91.3	0	A	ASIA	Iran-05	BAR-08
viba_308	IRN/9/2011	bovine	90.7	0	A	ASIA	Iran-05	QAZ-11



Virus sample name:	IRN/22/2021
Sender reference:	IR/1400/31
Location of origin:	Charmahal
Country of origin:	Iran
Date of collection:	17/05/2021
Host species:	bovine
Serotype:	A
Topotype:	ASIA
Lineage:	Iran-05
Sublineage:	FAR-11
Sequence length:	633
Ambiguities:	0
Material submitted for sequencing:	WRL-LFBK1
Harvest date of material:	23/07/2021
Primers:	A-1C562F/EUR-2B52R, FMD-3161F/FMD-4303R
Received for sequencing:	09/08/2021
Created:	17/08/2021
Last updated:	17/08/2021
VIBASys IDs: sample 48550, genome 48551, sequence viba_48552, sequencing info 48553	

#### Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_48540	IRN/15/2021	bovine	99.1	0	A	ASIA	Iran-05	FAR-11
viba_45686	IRN/991471/2020	cattle	97.5	0	A	ASIA	Iran-05	FAR-11
viba_48504	IRN/20/2020	bovine	97.5	0	A	ASIA	Iran-05	FAR-11
viba_48508	IRN/23/2020	bovine	97.5	0	A	ASIA	Iran-05	FAR-11
viba_45677	IRN/994883/2020	cattle	97.3	0	A	ASIA	Iran-05	FAR-11
viba_45665	IRN/99466/2020	cattle	97.3	0	A	ASIA	Iran-05	FAR-11
viba_48520	IRN/4/2021	bovine	97.3	0	A	ASIA	Iran-05	FAR-11
viba_48532	IRN/8/2021	bovine	97.2	0	A	ASIA	Iran-05	FAR-11
viba_45669	IRN/99483/2020	cattle	97.2	0	A	ASIA	Iran-05	FAR-11
viba_48536	IRN/9/2021	bovine	97.2	0	A	ASIA	Iran-05	FAR-11

#### Most Closely Related Prototype Sequences

see <http://www.wrlfmd.org/fmdv-genome/fmd-prototype-strains>

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_594	IRN/1/2011	bovine	94.3	0	A	ASIA	Iran-05	FAR-11
viba_414	AFG/6/2007	bovine	93.2	0	A	ASIA	Iran-05	AFG-07
viba_10508	PAK/7/2008	water buffalo	93.0	0	A	ASIA	Iran-05	SIN-08
viba_636	IRN/78/2009		92.6	0	A	ASIA	Iran-05	FAR-09
viba_319	BAR/6/2008	bovine	92.3	0	A	ASIA	Iran-05	BAR-08
viba_13615	IRN/134/2010	cattle	92.0	0	A	ASIA	Iran-05	HER-10
viba_34671	BAL/PAK/05/2011	cattle	91.9	0	A	ASIA	Iran-05	BAL-11
viba_133	IRN/1/2005	cattle	91.8	0	A	ASIA	Iran-05	
viba_557	IRN/15/2012	bovine	91.8	0	A	ASIA	Iran-05	SIS-12
viba_403	TUR/1/2008	cattle	91.5	0	A	ASIA	Iran-05	ARD-07

Virus sample name:	IRN/23/2021
Sender reference:	IR/1400/29
Location of origin:	West Azerbaijan
Country of origin:	Iran
Date of collection:	24/05/2021
Host species:	bovine
Serotype:	A
Topotype:	ASIA
Lineage:	Iran-05
Sublineage:	FAR-11
Sequence length:	633
Ambiguities:	0
Material submitted for sequencing:	WRL-LFBK1
Harvest date of material:	23/07/2021
Primers:	A-1C562F/EUR-2B52R, FMD-3161F/FMD-4303R
Received for sequencing:	09/08/2021
Created:	17/08/2021
Last updated:	17/08/2021
VIBASys IDs: sample 48554, genome 48555, sequence viba_48556, sequencing info 48557	

#### Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_45677	IRN/994883/2020	cattle	99.4	0	A	ASIA	Iran-05	FAR-11
viba_48516	IRN/2/2021	bovine	99.2	0	A	ASIA	Iran-05	FAR-11
viba_48536	IRN/9/2021	bovine	99.2	0	A	ASIA	Iran-05	FAR-11
viba_48524	IRN/5/2021	bovine	99.2	0	A	ASIA	Iran-05	FAR-11
viba_48504	IRN/20/2020	bovine	99.2	0	A	ASIA	Iran-05	FAR-11
viba_48508	IRN/23/2020	bovine	99.2	0	A	ASIA	Iran-05	FAR-11
viba_48520	IRN/4/2021	bovine	99.1	0	A	ASIA	Iran-05	FAR-11
viba_48532	IRN/8/2021	bovine	98.9	0	A	ASIA	Iran-05	FAR-11
viba_45686	IRN/991471/2020	cattle	98.9	0	A	ASIA	Iran-05	FAR-11
viba_48492	IRN/12/2020	bovine	98.7	0	A	ASIA	Iran-05	FAR-11

#### Most Closely Related Prototype Sequences

see <http://www.wrlfmd.org/fmdv-genome/fmd-prototype-strains>

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_594	IRN/1/2011	bovine	93.5	0	A	ASIA	Iran-05	FAR-11
viba_10508	PAK/7/2008	water buffalo	93.2	0	A	ASIA	Iran-05	SIN-08
viba_414	AFG/6/2007	bovine	92.6	0	A	ASIA	Iran-05	AFG-07
viba_13615	IRN/134/2010	cattle	92.1	0	A	ASIA	Iran-05	HER-10
viba_557	IRN/15/2012	bovine	92.1	0	A	ASIA	Iran-05	SIS-12
viba_34671	BAL/PAK/05/2011	cattle	91.8	0	A	ASIA	Iran-05	BAL-11
viba_319	BAR/6/2008	bovine	91.8	0	A	ASIA	Iran-05	BAR-08
viba_636	IRN/78/2009		91.6	0	A	ASIA	Iran-05	FAR-09
viba_133	IRN/1/2005	cattle	91.6	0	A	ASIA	Iran-05	
viba_403	TUR/1/2008	cattle	91.0	0	A	ASIA	Iran-05	ARD-07

Virus sample name:	IRN/26/2021
Sender reference:	IR/1400/27
Location of origin:	West Azerbaijan
Country of origin:	Iran
Date of collection:	08/06/2021
Host species:	bovine
Serotype:	A
Topotype:	ASIA
Lineage:	Iran-05
Sublineage:	FAR-11
Sequence length:	633
Ambiguities:	0
Material submitted for sequencing:	WRL-LFBK2
Harvest date of material:	29/07/2021
Primers:	A-1C562F/EUR-2B52R
Received for sequencing:	09/08/2021
Created:	17/08/2021
Last updated:	17/08/2021
VIBASys IDs: sample 48558, genome 48559, sequence viba_48560, sequencing info 48561	

#### Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_48504	IRN/20/2020	bovine	99.1	0	A	ASIA	Iran-05	FAR-11
viba_48508	IRN/23/2020	bovine	99.1	0	A	ASIA	Iran-05	FAR-11
viba_45677	IRN/994883/2020	cattle	98.9	0	A	ASIA	Iran-05	FAR-11
viba_48520	IRN/4/2021	bovine	98.9	0	A	ASIA	Iran-05	FAR-11
viba_48516	IRN/2/2021	bovine	98.7	0	A	ASIA	Iran-05	FAR-11
viba_48532	IRN/8/2021	bovine	98.7	0	A	ASIA	Iran-05	FAR-11
viba_48536	IRN/9/2021	bovine	98.7	0	A	ASIA	Iran-05	FAR-11
viba_45686	IRN/991471/2020	cattle	98.7	0	A	ASIA	Iran-05	FAR-11
viba_48524	IRN/5/2021	bovine	98.7	0	A	ASIA	Iran-05	FAR-11
viba_48492	IRN/12/2020	bovine	98.6	0	A	ASIA	Iran-05	FAR-11

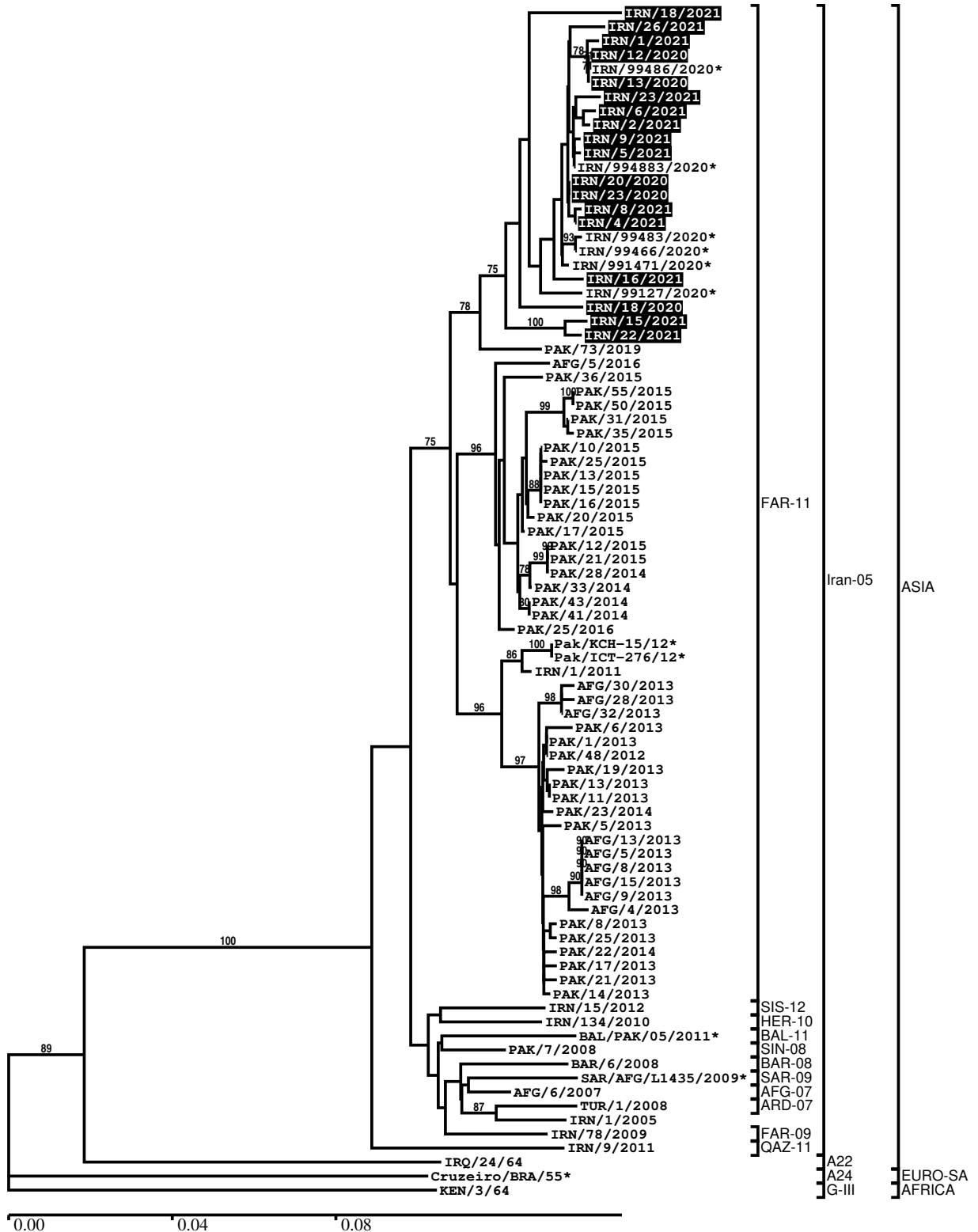
#### Most Closely Related Prototype Sequences

see <http://www.wrlfmd.org/fmdv-genome/fmd-prototype-strains>

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_594	IRN/1/2011	bovine	93.7	0	A	ASIA	Iran-05	FAR-11
viba_10508	PAK/7/2008	water buffalo	92.7	0	A	ASIA	Iran-05	SIN-08
viba_557	IRN/15/2012	bovine	92.6	0	A	ASIA	Iran-05	SIS-12
viba_414	AFG/6/2007	bovine	92.4	0	A	ASIA	Iran-05	AFG-07
viba_34671	BAL/PAK/05/2011	cattle	92.3	0	A	ASIA	Iran-05	BAL-11
viba_13615	IRN/134/2010	cattle	92.0	0	A	ASIA	Iran-05	HER-10
viba_636	IRN/78/2009		91.5	0	A	ASIA	Iran-05	FAR-09
viba_319	BAR/6/2008	bovine	91.3	0	A	ASIA	Iran-05	BAR-08
viba_133	IRN/1/2005	cattle	91.2	0	A	ASIA	Iran-05	
viba_403	TUR/1/2008	cattle	90.8	0	A	ASIA	Iran-05	ARD-07

Report on FMDV A in Iran in 2020, 2021

Batch: WRLFMD/2021/00009



\*, not a WRLFMD Reference Number

## Analysis Parameters

VP1 subsequence extractor:	vp1_A
Query sequence set:	WRLFMD/2021/00009-Iran-A (18 sequences)
Sequence database set:	allseqs_A (2272 sequences)
Prototype sequence set:	!prototypes_A (40 sequences)
Number of related sequences reported:	10
Minimal VP1 subsequence match length	600
Sequence alignment method:	muscle (default parameters)
Sequence alignment length:	633
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:	12
VIBASys version:	reflabs-1.1.2

## Sequences in the Phylogenetic Tree

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

label	accession	host(s)	lab	country	taxonomic information
IRN/18/2021	n/a	bovine	WRLFMD	Iran	ASIA/Iran-05/FAR-11
IRN/26/2021	n/a	bovine	WRLFMD	Iran	ASIA/Iran-05/FAR-11
IRN/1/2021	n/a	bovine	WRLFMD	Iran	ASIA/Iran-05/FAR-11
IRN/12/2020	n/a	bovine	WRLFMD	Iran	ASIA/Iran-05/FAR-11
IRN/99486/2020*	n/a	cattle	CVL-IVO	Iran	ASIA/Iran-05/FAR-11
IRN/13/2020	n/a	bovine	WRLFMD	Iran	ASIA/Iran-05/FAR-11
IRN/23/2021	n/a	bovine	WRLFMD	Iran	ASIA/Iran-05/FAR-11
IRN/6/2021	n/a	bovine	WRLFMD	Iran	ASIA/Iran-05/FAR-11
IRN/2/2021	n/a	bovine	WRLFMD	Iran	ASIA/Iran-05/FAR-11
IRN/9/2021	n/a	bovine	WRLFMD	Iran	ASIA/Iran-05/FAR-11
IRN/5/2021	n/a	bovine	WRLFMD	Iran	ASIA/Iran-05/FAR-11
IRN/994883/2020*	n/a	cattle	CVL-IVO	Iran	ASIA/Iran-05/FAR-11
IRN/20/2020	n/a	bovine	WRLFMD	Iran	ASIA/Iran-05/FAR-11
IRN/23/2020	n/a	bovine	WRLFMD	Iran	ASIA/Iran-05/FAR-11
IRN/8/2021	n/a	bovine	WRLFMD	Iran	ASIA/Iran-05/FAR-11
IRN/4/2021	n/a	bovine	WRLFMD	Iran	ASIA/Iran-05/FAR-11
IRN/99483/2020*	n/a	cattle	CVL-IVO	Iran	ASIA/Iran-05/FAR-11
IRN/99466/2020*	n/a	cattle	CVL-IVO	Iran	ASIA/Iran-05/FAR-11
IRN/991471/2020*	n/a	cattle	CVL-IVO	Iran	ASIA/Iran-05/FAR-11
IRN/16/2021	n/a	bovine	WRLFMD	Iran	ASIA/Iran-05/FAR-11
IRN/99127/2020*	n/a	cattle	CVL-IVO	Iran	ASIA/Iran-05/FAR-11
IRN/18/2020	n/a	bovine	WRLFMD	Iran	ASIA/Iran-05/FAR-11
IRN/15/2021	n/a	bovine	WRLFMD	Iran	ASIA/Iran-05/FAR-11
IRN/22/2021	n/a	bovine	WRLFMD	Iran	ASIA/Iran-05/FAR-11
PAK/73/2019	n/a	cattle	WRLFMD	Pakistan	ASIA/Iran-05/FAR-11
AFG/5/2016	n/a	bovine	WRLFMD	Afghanistan	ASIA/Iran-05/FAR-11
PAK/36/2015	n/a	cattle	WRLFMD	Pakistan	ASIA/Iran-05/FAR-11
PAK/55/2015	n/a	cattle	WRLFMD	Pakistan	ASIA/Iran-05/FAR-11
PAK/50/2015	n/a	water buffalo	WRLFMD	Pakistan	ASIA/Iran-05/FAR-11
PAK/31/2015	n/a	water buffalo	WRLFMD	Pakistan	ASIA/Iran-05/FAR-11
PAK/35/2015	n/a	cattle	WRLFMD	Pakistan	ASIA/Iran-05/FAR-11
PAK/10/2015	n/a	cattle	WRLFMD	Pakistan	ASIA/Iran-05/FAR-11
PAK/25/2015	n/a	cattle	WRLFMD	Pakistan	ASIA/Iran-05/FAR-11
PAK/13/2015	n/a	cattle	WRLFMD	Pakistan	ASIA/Iran-05/FAR-11
PAK/15/2015	n/a	water buffalo	WRLFMD	Pakistan	ASIA/Iran-05/FAR-11
PAK/16/2015	n/a	cattle	WRLFMD	Pakistan	ASIA/Iran-05/FAR-11

*continued on next page*

label	accession	host(s)	lab	country	taxonomic information
PAK/20/2015	n/a	cattle	WRLFMD	Pakistan	ASIA/Iran-05/FAR-11
PAK/17/2015	n/a	water buffalo	WRLFMD	Pakistan	ASIA/Iran-05/FAR-11
PAK/12/2015	n/a	water buffalo	WRLFMD	Pakistan	ASIA/Iran-05/FAR-11
PAK/21/2015	n/a	cattle	WRLFMD	Pakistan	ASIA/Iran-05/FAR-11
PAK/28/2014	n/a	cattle	WRLFMD	Pakistan	ASIA/Iran-05/FAR-11
PAK/33/2014	n/a	cattle	WRLFMD	Pakistan	ASIA/Iran-05/FAR-11
PAK/43/2014	n/a	cattle	WRLFMD	Pakistan	ASIA/Iran-05/FAR-11
PAK/41/2014	n/a	cattle	WRLFMD	Pakistan	ASIA/Iran-05/FAR-11
PAK/25/2016	n/a	water buffalo	WRLFMD	Pakistan	ASIA/Iran-05/FAR-11
Pak/KCH-15/12*	KU360079	cattle	PIADC	Pakistan	ASIA/Iran-05/FAR-11
Pak/ICT-276/12*	KU258637	bovine	PIADC	Pakistan	ASIA/Iran-05/FAR-11
IRN/1/2011	KY091292	bovine	WRLFMD	Iran	ASIA/Iran-05/FAR-11
AFG/30/2013	n/a	cattle	WRLFMD	Afghanistan	ASIA/Iran-05/FAR-11
AFG/28/2013	n/a	cattle	WRLFMD	Afghanistan	ASIA/Iran-05/FAR-11
AFG/32/2013	n/a	cattle	WRLFMD	Afghanistan	ASIA/Iran-05/FAR-11
PAK/6/2013	n/a	cattle	WRLFMD	Pakistan	ASIA/Iran-05/FAR-11
PAK/1/2013	n/a	water buffalo	WRLFMD	Pakistan	ASIA/Iran-05/FAR-11
PAK/48/2012	n/a	cattle	WRLFMD	Pakistan	ASIA/Iran-05/FAR-11
PAK/19/2013	n/a	water buffalo	WRLFMD	Pakistan	ASIA/Iran-05/FAR-11
PAK/13/2013	n/a	water buffalo	WRLFMD	Pakistan	ASIA/Iran-05/FAR-11
PAK/11/2013	n/a	cattle	WRLFMD	Pakistan	ASIA/Iran-05/FAR-11
PAK/23/2014	n/a	water buffalo	WRLFMD	Pakistan	ASIA/Iran-05/FAR-11
PAK/5/2013	n/a	cattle	WRLFMD	Pakistan	ASIA/Iran-05/FAR-11
AFG/13/2013	n/a	cattle	WRLFMD	Afghanistan	ASIA/Iran-05/FAR-11
AFG/5/2013	n/a	cattle	WRLFMD	Afghanistan	ASIA/Iran-05/FAR-11
AFG/8/2013	n/a	cattle	WRLFMD	Afghanistan	ASIA/Iran-05/FAR-11
AFG/15/2013	n/a	cattle	WRLFMD	Afghanistan	ASIA/Iran-05/FAR-11
AFG/9/2013	n/a	cattle	WRLFMD	Afghanistan	ASIA/Iran-05/FAR-11
AFG/4/2013	n/a	cattle	WRLFMD	Afghanistan	ASIA/Iran-05/FAR-11
PAK/8/2013	n/a	cattle	WRLFMD	Pakistan	ASIA/Iran-05/FAR-11
PAK/25/2013	n/a	water buffalo	WRLFMD	Pakistan	ASIA/Iran-05/FAR-11
PAK/22/2014	n/a	cattle	WRLFMD	Pakistan	ASIA/Iran-05/FAR-11
PAK/17/2013	n/a	cattle	WRLFMD	Pakistan	ASIA/Iran-05/FAR-11
PAK/21/2013	n/a	cattle	WRLFMD	Pakistan	ASIA/Iran-05/FAR-11
PAK/14/2013	n/a	cattle	WRLFMD	Pakistan	ASIA/Iran-05/FAR-11
IRN/15/2012	KY091297	bovine	WRLFMD	Iran	ASIA/Iran-05/SIS-12
IRN/134/2010	n/a	cattle	WRLFMD	Iran	ASIA/Iran-05/HER-10
BAL/PAK/05/2011*	KT832824	cattle	Univ Malakand	Pakistan	ASIA/Iran-05/BAL-11
PAK/7/2008	MN276047	water buffalo	WRLFMD	Pakistan	ASIA/Iran-05/SIN-08
BAR/6/2008	FJ755010	bovine	WRLFMD	Bahrain	ASIA/Iran-05/BAR-08
SAR/AFG/L1435/2009*	HQ439274	cattle	LINDHOLM	Afghanistan	ASIA/Iran-05/SAR-09
AFG/6/2007	FJ755007	bovine	WRLFMD	Afghanistan	ASIA/Iran-05/AFG-07
TUR/1/2008	FJ755133	cattle	WRLFMD	Turkey	ASIA/Iran-05/ARD-07
IRN/1/2005	EF208769	cattle	WRLFMD	Iran	ASIA/Iran-05
IRN/78/2009	KY091291	n/a	WRLFMD	Iran	ASIA/Iran-05/FAR-09
IRN/9/2011	KY091295	bovine	WRLFMD	Iran	ASIA/Iran-05/QAZ-11
IRQ/24/64	AY593763	bovine	PIADC	Iraq	ASIA/A22
Cruzeiro/BRA/55*	AY593768	bovine	PIADC	Brazil	EURO-SA/A24
KEN/3/64	AY593761	n/a	PIADC	Kenya	AFRICA/G-III

\*, not a WRLFMD Reference Number

n/a, not available