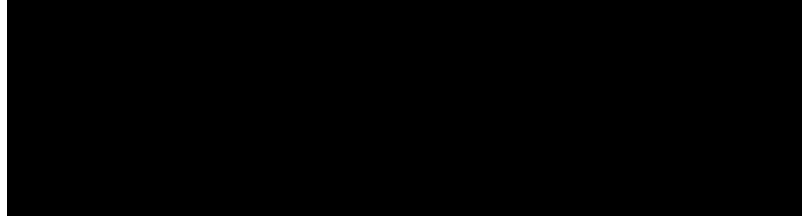




FMD Genotyping Report

Lab Reference WRL batch Number: WRLMEG/2023/00004

Sender Details:



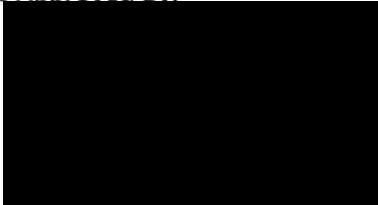
Date Received: 02/02/2023

Country of Origin*: Iraq

This report is prepared on behalf of the Şap Enstitüsü (Ankara, Turkey) and Veterinary Authorities in Iraq and covers a VP1 sequence submitted to the WRLFMD on 02 February 2023.

Please note that all of our phylogenetic trees can be accessed via the internet at: <http://www.wrlfmd.org/>

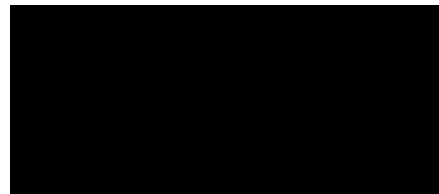
Results Approved By:



Date:

2/2/23

Official Stamp:



c.c.: L Bakkali-Kassimi, D King, M Henstock, H Hicks, N Knowles, A Ludi, N Mapitse, S Metwally, V Mioulet, J Pinto, K Sumption, J Wadsworth, B Wood, FAO Circulation, OIE Animal Health Information, Regional OIE Delegate.

To help us improve the quality of our service, please send any suggestions or requests to the Reference Laboratory by email (reflabsfeedback@pirbright.ac.uk).

* Data supplied by the customer

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

Genotyping Report

FMDV serotype: SAT2
Country: Iraq
Year: 2023
Batch: WRLMEG/2023/00004
No. of sequences: 1
Report date: 2nd February 2023
Report generated by: Nick Knowles
Report checked by: Don King

This report is prepared on behalf of the Şap Enstitüsü (Ankara, Turkey) and Veterinary Authorities in Iraq and covers a VP1 sequence submitted to the WRLFMD on 02 February 2023.



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www: <http://www.wrlfmd.org/>

email: reporting@pirbright.ac.uk

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Virus sample name:	IRQ/S41/Nineveh/2023
Sender reference:	SAT2/IRQ/S41/Nineveh/2023
Location of origin:	Damargi, Nineveh
Country of origin:	Iraq
Date of collection:	2023
Host species:	
Serotype:	SAT2
Topotype:	XIV
Lineage:	
Sublineage:	
Sequence length:	642
Ambiguities:	0
Material submitted for sequencing:	n/a
Harvest date of material:	n/a
Primers:	n/a
Received for sequencing:	n/a
Created:	02/02/2023
Last updated:	02/02/2023
VIBASys IDs: sample 52395, genome 52396, sequence viba_52397, sequencing info 52398	

Most Closely Related Sequences

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_51516	ETH/2/2022	bovine	98.0	0	SAT2	XIV		
viba_51520	ETH/3/2022	bovine	98.0	0	SAT2	XIV		
viba_724	ETH/2/91	cattle	83.5	0	SAT2	XIV		
viba_3533	ETH/2/91	cattle	83.5	0	SAT2	XIV		
viba_3537	ETH/3/91	cattle	83.5	0	SAT2	XIV		
viba_3530	ETH/1/91	cattle	83.5	0	SAT2	XIV		
viba_27119	KNP/7/88	African buffalo	75.9	1	SAT2	I		
viba_11306	SUD/2/2008	cattle	75.5	0	SAT2	XIII		
viba_42134	KEN/PRB23/2016 pro	African buffalo	75.5	0	SAT2	IV		
viba_29023	MOZ/4/83		75.4	0	SAT2	I		

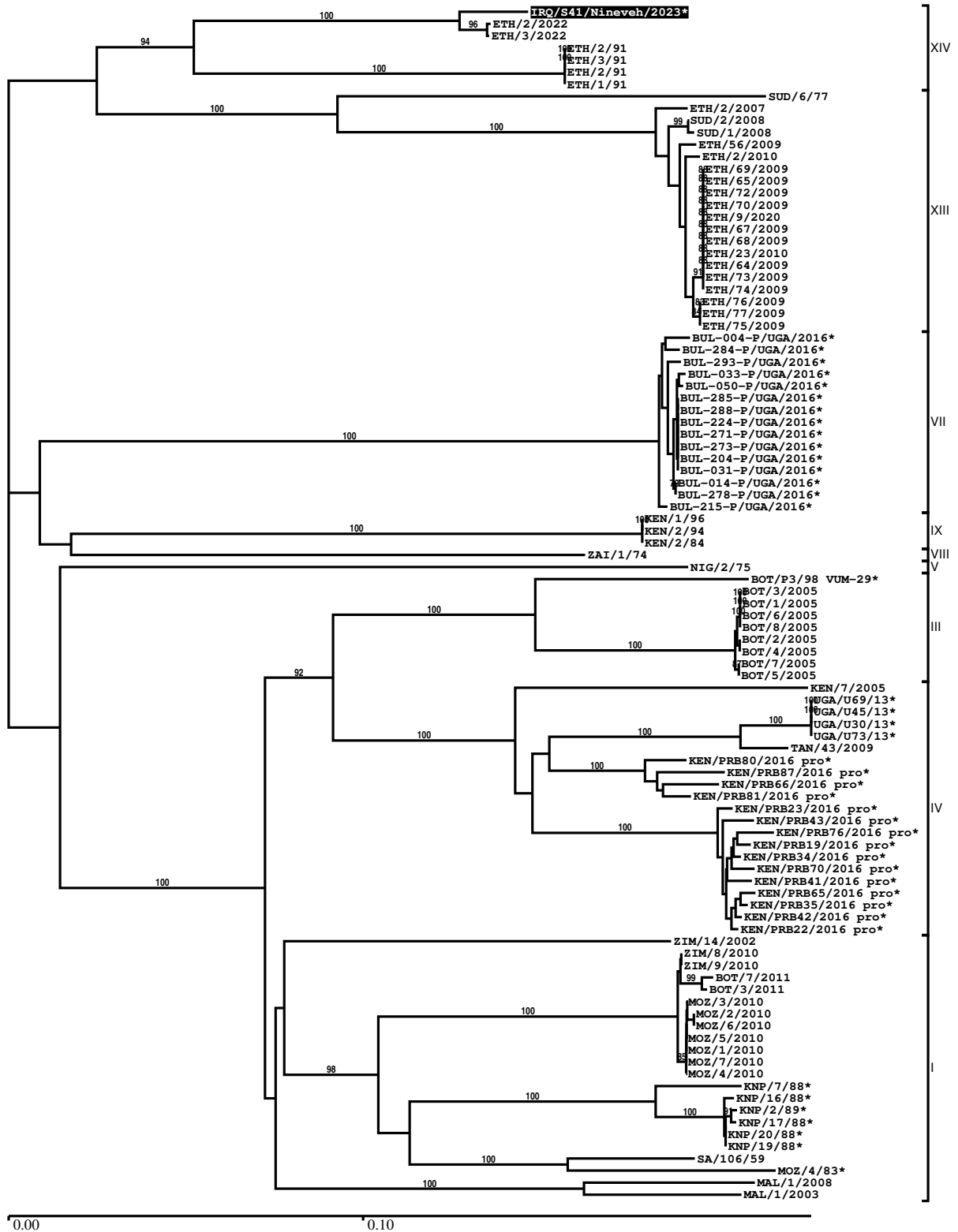
Most Closely Related Prototype Sequences

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

sequence	virus name	Host	% Id.	# Ambig.	serotype	topotype	lineage	sublineage
viba_724	ETH/2/91	cattle	83.5	0	SAT2	XIV		
viba_139	ETH/2/2007	cattle	75.4	0	SAT2	XIII		
viba_752	SA/106/59		74.8	0	SAT2	I		
viba_470	KEN/2/84	bovine	74.7	0	SAT2	IX		
viba_500	NIG/2/75	bovine	74.2	0	SAT2	V		
viba_193	SUD/6/77		74.1	0	SAT2	XIII		
viba_451	BOT/P3/98 VUM-29	African buffalo	74.0	1	SAT2	III		
viba_183	ZIM/14/2002	bovine	73.9	0	SAT2	I		
viba_111	MAL/1/2003	bovine	73.5	0	SAT2	I		
viba_374	ZAI/1/74		73.0	0	SAT2	VIII		

Report on FMDV SAT2 in Iraq in 2023

Batch: WRLMEG/2023/00004



*, not a WRLFMD Reference Number

Analysis Parameters

VP1 subsequence extractor:	vp1_SAT2
Query sequence set:	WRLMEG/2023/00004-Iraq-SAT2 (1 sequences)
Sequence database set:	allseqs_SAT2 (1119 sequences)
Prototype sequence set:	!prototypes_SAT2 (25 sequences)
Number of related sequences reported:	10
Minimal VP1 subsequence match length	600
Sequence alignment method:	muscle (default parameters)
Sequence alignment length:	642
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:	10
VIBASys version:	reflabs-1.1.2

Sequences in the Phylogenetic Tree

All sequences in the tree are in taxonomic group FMDV/SAT2

label	accession	host(s)	lab	country	taxonomic information
IRQ/S41/Nineveh/2023*	n/a	n/a	FMDI	Iraq	XIV
ETH/2/2022	n/a	bovine	WRLFMD	Ethiopia	XIV
ETH/3/2022	n/a	bovine	WRLFMD	Ethiopia	XIV
ETH/2/91	FJ798159	cattle	WRLFMD	Ethiopia	XIV
ETH/3/91	FJ798160	cattle	WRLFMD	Ethiopia	XIV
ETH/2/91	AY343938	cattle	OVI	Ethiopia	XIV
ETH/1/91	FJ798158	cattle	WRLFMD	Ethiopia	XIV
SUD/6/77	AY343939	n/a	OVI	Sudan	XIII
ETH/2/2007	FJ798161	cattle	WRLFMD	Ethiopia	XIII
SUD/2/2008	GU566073	cattle	WRLFMD	Sudan	XIII
SUD/1/2008	GU566072	cattle	WRLFMD	Sudan	XIII
ETH/56/2009	KF112943	cattle	WRLFMD	Ethiopia	XIII
ETH/2/2010	KF112956	cattle	WRLFMD	Ethiopia	XIII
ETH/69/2009	KF112948	cattle	WRLFMD	Ethiopia	XIII
ETH/65/2009	KF112945	cattle	WRLFMD	Ethiopia	XIII
ETH/72/2009	KF112950	porcine	WRLFMD	Ethiopia	XIII
ETH/70/2009	KF112949	cattle	WRLFMD	Ethiopia	XIII
ETH/9/2020	n/a	bovine	WRLFMD	Ethiopia	XIII
ETH/67/2009	KF112946	cattle	WRLFMD	Ethiopia	XIII
ETH/68/2009	KF112947	cattle	WRLFMD	Ethiopia	XIII
ETH/23/2010	MN987543	porcine	WRLFMD	Ethiopia	XIII
ETH/64/2009	KF112944	cattle	WRLFMD	Ethiopia	XIII
ETH/73/2009	KF112951	cattle	WRLFMD	Ethiopia	XIII
ETH/74/2009	KF112952	cattle	WRLFMD	Ethiopia	XIII
ETH/76/2009	KF112954	cattle	WRLFMD	Ethiopia	XIII
ETH/77/2009	KF112955	cattle	WRLFMD	Ethiopia	XIII
ETH/75/2009	KF112953	cattle	WRLFMD	Ethiopia	XIII
BUL-004-P/UGA/2016*	MH367457	cattle	PIADC	Uganda	VII
BUL-284-P/UGA/2016*	MH367462	cattle	PIADC	Uganda	VII
BUL-293-P/UGA/2016*	MH367454	cattle	PIADC	Uganda	VII
BUL-033-P/UGA/2016*	MH367450	cattle	PIADC	Uganda	VII
BUL-050-P/UGA/2016*	MH367446	cattle	PIADC	Uganda	VII
BUL-285-P/UGA/2016*	MH367460	cattle	PIADC	Uganda	VII
BUL-288-P/UGA/2016*	MH367461	cattle	PIADC	Uganda	VII
BUL-224-P/UGA/2016*	MH367447	cattle	PIADC	Uganda	VII
BUL-271-P/UGA/2016*	MH367466	cattle	PIADC	Uganda	VII

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label	accession	host(s)	lab	country	taxonomic information
BUL-273-P/UGA/2016*	MH367463	cattle	PIADC	Uganda	VII
BUL-204-P/UGA/2016*	MH367453	cattle	PIADC	Uganda	VII
BUL-031-P/UGA/2016*	MH367444	cattle	PIADC	Uganda	VII
BUL-014-P/UGA/2016*	MH367448	cattle	PIADC	Uganda	VII
BUL-278-P/UGA/2016*	MH367464	cattle	PIADC	Uganda	VII
BUL-215-P/UGA/2016*	MH367452	cattle	PIADC	Uganda	VII
KEN/1/96	AY343960	n/a	OVI	Kenya	IX
KEN/2/94	AY343955	n/a	OVI	Kenya	IX
KEN/2/84	AY343941	bovine	OVI	Kenya	IX
ZAI/1/74	DQ009737	n/a	OVI	Zaire	VIII
NIG/2/75	AF367139	bovine	OVI	Nigeria	V
BOT/P3/98 VUM-29*	AF367124	African buffalo	OVI	Botswana	III
BOT/3/2005	n/a	cattle	WRLFMD	Botswana	III
BOT/1/2005	n/a	cattle	WRLFMD	Botswana	III
BOT/6/2005	n/a	cattle	WRLFMD	Botswana	III
BOT/8/2005	n/a	cattle	WRLFMD	Botswana	III
BOT/2/2005	n/a	cattle	WRLFMD	Botswana	III
BOT/4/2005	n/a	cattle	WRLFMD	Botswana	III
BOT/7/2005	n/a	cattle	WRLFMD	Botswana	III
BOT/5/2005	n/a	cattle	WRLFMD	Botswana	III
KEN/7/2005	n/a	cattle	WRLFMD	Kenya	IV
UGA/U69/13*	KP089989	bovine	Makerere University	Uganda	IV
UGA/U45/13*	KP089988	bovine	Makerere University	Uganda	IV
UGA/U30/13*	KP089986	bovine	Makerere University	Uganda	IV
UGA/U73/13*	KP089990	bovine	Makerere University	Uganda	IV
TAN/43/2009	KF561727	cattle	WRLFMD	Tanzania	IV
KEN/PRB80/2016 pro*	MH882657	African buffalo	PIADC	Kenya	IV
KEN/PRB87/2016 pro*	MH882662	African buffalo	PIADC	Kenya	IV
KEN/PRB66/2016 pro*	MH882648	African buffalo	PIADC	Kenya	IV
KEN/PRB81/2016 pro*	MH882658	African buffalo	PIADC	Kenya	IV
KEN/PRB23/2016 pro*	MH882624	African buffalo	PIADC	Kenya	IV
KEN/PRB43/2016 pro*	MH882632	African buffalo	PIADC	Kenya	IV
KEN/PRB76/2016 pro*	MH882656	African buffalo	PIADC	Kenya	IV
KEN/PRB19/2016 pro*	MH882621	African buffalo	PIADC	Kenya	IV
KEN/PRB34/2016 pro*	MH882625	African buffalo	PIADC	Kenya	IV
KEN/PRB70/2016 pro*	MH882652	African buffalo	PIADC	Kenya	IV
KEN/PRB41/2016 pro*	MH882630	African buffalo	PIADC	Kenya	IV
KEN/PRB65/2016 pro*	MH882647	African buffalo	PIADC	Kenya	IV
KEN/PRB35/2016 pro*	MH882626	African buffalo	PIADC	Kenya	IV
KEN/PRB42/2016 pro*	MH882631	African buffalo	PIADC	Kenya	IV
KEN/PRB22/2016 pro*	MH882623	African buffalo	PIADC	Kenya	IV
ZIM/14/2002	KF219689	bovine	WRLFMD	Zimbabwe	I
ZIM/8/2010	n/a	bovine	WRLFMD	Zimbabwe	I
ZIM/9/2010	n/a	bovine	WRLFMD	Zimbabwe	I
BOT/7/2011	n/a	cattle	WRLFMD	Botswana	I
BOT/3/2011	n/a	cattle	WRLFMD	Botswana	I
MOZ/3/2010	n/a	cattle	WRLFMD	Mozambique	I
MOZ/2/2010	n/a	cattle	WRLFMD	Mozambique	I
MOZ/6/2010	n/a	cattle	WRLFMD	Mozambique	I
MOZ/5/2010	n/a	cattle	WRLFMD	Mozambique	I
MOZ/1/2010	n/a	cattle	WRLFMD	Mozambique	I
MOZ/7/2010	n/a	n/a	WRLFMD	Mozambique	I
MOZ/4/2010	n/a	cattle	WRLFMD	Mozambique	I
KNP/7/88*	AF367103	African buffalo	OVI	South Africa (KNP)	I
KNP/16/88*	AF367104	impala	OVI	South Africa (KNP)	I
KNP/2/89*	AF367109	impala	OVI	South Africa (KNP)	I
KNP/17/88*	AF367105	impala	OVI	South Africa (KNP)	I
KNP/20/88*	AF367107	impala	OVI	South Africa (KNP)	I

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label	accession	host(s)	lab	country	taxonomic information
KNP/19/88*	AF367106	impala	OVI	South Africa (KNP)	I
SA/106/59	AY593848	n/a	PIADC	South Africa (SA)	I
MOZ/4/83*	AF367101	n/a	OVI	Mozambique	I
MAL/1/2008	n/a	cattle	WRLFMD	Malawi	I
MAL/1/2003	n/a	bovine	WRLFMD	Malawi	I

*, not a WRLFMD Reference Number

n/a, not available