



FMD Genotyping Report

Lab Reference WRL batch Number: WRLFMD/2025/000016

Sender Details:



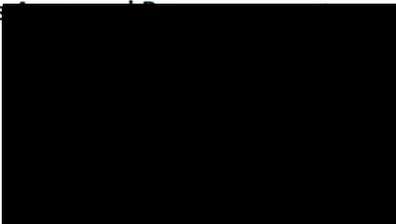
Date Received: 11/09/2025

Country of Origin*: Ethiopia

Work has now been completed in respect of the samples recently submitted and the details are as attached.

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

Results:



Official Stamp:

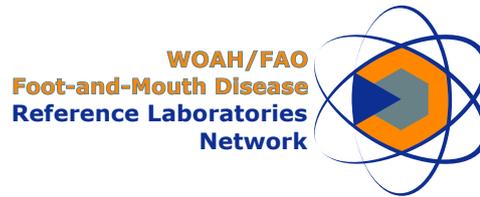


Date:

10/11/25

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)

FMDV Genotyping Report

Generated from: [FMDtype](#) | FMDV Genotyping Tool

Downloaded on: 05 November 2025

Citation: WRLFMD. 2025. FMDV Genotyping Report [WRLFMD/2025/000016]. (Accessed 05/11/25)

FMDV serotype: SAT2

Country: Ethiopia

Year: 2024

Batch: WRLFMD/2025/000016

No. of sequences: 1

Reported date: 05 November 2025

WRLFMD Website: <https://www.wrlfmd.org/>

Email: reporting@pirbright.ac.uk

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FMDtype is supported through funding from



Virus sample: ETH/10/2024

Sample details

| | |
|---------------------|--|
| Reception Date: | 2025-09-11 |
| Sender reference: | 24968 |
| Location of origin: | Wirsenfa, Abe Dogoro, Horo Guduru Welega, Oromia |
| Country of origin: | Ethiopia |
| Date of collection: | 2024-03-25 |
| Host species: | cattle |

Genotyping details

| | |
|-------------|------|
| Serotype: | SAT2 |
| Topotype: | XIV |
| Lineage: | None |
| Sublineage: | None |

Sequencing details

| | |
|------------------------------------|------------|
| Material submitted for sequencing: | WRL-LFBK1 |
| Material Harvest Date: | 2025-09-22 |
| Sequence length: | 642 |
| Ambiguities: | 0 |

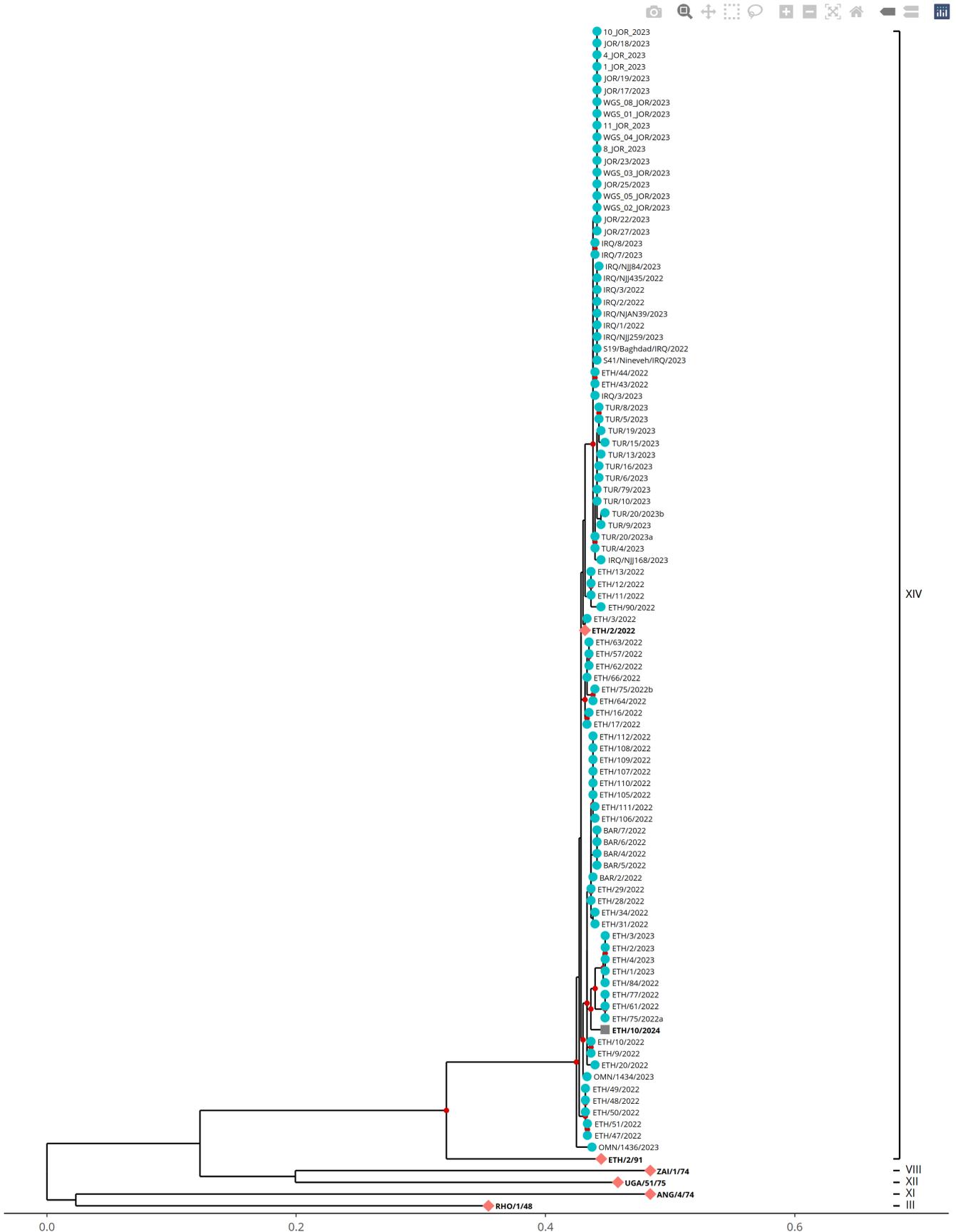
Most Closely Related FMDV Isolates

| Sequence ID | Virus Name | Host | % Id | #Ambig. | Serotype | Topotype | Lineage | Sublineage |
|--------------------------------------|--------------|--------|-------|---------|----------|----------|---------|------------|
| FMDV VP1 Sequences | | | | | | | | |
| 659179 | ETH/9/2022 | Cattle | 98.29 | 0 | SAT2 | XIV | None | None |
| 659180 | ETH/10/2022 | Cattle | 98.29 | 0 | SAT2 | XIV | None | None |
| 659197 | ETH/28/2022 | Cattle | 98.29 | 0 | SAT2 | XIV | None | None |
| 659198 | ETH/29/2022 | Cattle | 98.29 | 0 | SAT2 | XIV | None | None |
| 485617 | BAR/2/2022 | Cattle | 98.13 | 0 | SAT2 | XIV | None | None |
| 485618 | BAR/4/2022 | Cattle | 98.13 | 0 | SAT2 | XIV | None | None |
| 485619 | BAR/5/2022 | Cattle | 98.13 | 0 | SAT2 | XIV | None | None |
| 485620 | BAR/6/2022 | Cattle | 98.13 | 0 | SAT2 | XIV | None | None |
| 485621 | BAR/7/2022 | Cattle | 98.13 | 0 | SAT2 | XIV | None | None |
| 659181 | ETH/105/2022 | Cattle | 98.13 | 0 | SAT2 | XIV | None | None |
| FMDV VP1 Prototype Sequences* | | | | | | | | |
| 296369 | ETH/2/2022 | Bovine | 97.82 | 0 | SAT2 | XIV | None | None |
| 5525 | ETH/2/91 | Cattle | 84.29 | 0 | SAT2 | XIV | None | None |

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

Tree

■ Uploaded sequence
 ● Database sequence
 ◆ Reference sequence



Analysis Parameters

Query sequence set: WRLFMD/2025/000016
Number of related sequences reported: 94
Number of prototype sequences in tree: 6
Minimal VP1 subsequence match length: 610
Sequence alignment length: 643

Number of sequences in tree capped at: 100
Sequence alignment method: MAFFT 7.522
Phylogeny reconstruction method: IQ-TREE 2.26
Number of bootstrap samples: 1000
Displaying bootstrap values above: 75

FMDV VP1 Sequences included in the Phylogenetic Tree

| Sequence Name | GenBank Accession | Host | Ref Lab | Country | FMDV Taxonomy | Pubmed Reference Number |
|------------------------|-------------------|---------------|---------|----------|---------------|-------------------------|
| ETH/3/2022 | PQ847920 | Bovine | WRLFMD | Ethiopia | SAT2/XIV | None |
| S19/Baghdad/IRQ/2022 * | None | Water Buffalo | FMDI | Iraq | SAT2/XIV | None |
| S41/Nineveh/IRQ/2023 * | None | Cattle | FMDI | Iraq | SAT2/XIV | None |
| BAR/2/2022 | None | Cattle | WRLFMD | Bahrain | SAT2/XIV | None |
| BAR/4/2022 | None | Cattle | WRLFMD | Bahrain | SAT2/XIV | None |
| BAR/5/2022 | None | Cattle | WRLFMD | Bahrain | SAT2/XIV | None |
| BAR/6/2022 | None | Cattle | WRLFMD | Bahrain | SAT2/XIV | None |
| BAR/7/2022 | None | Cattle | WRLFMD | Bahrain | SAT2/XIV | None |
| IRQ/1/2022 | None | Water Buffalo | WRLFMD | Iraq | SAT2/XIV | None |
| IRQ/2/2022 | None | Water Buffalo | WRLFMD | Iraq | SAT2/XIV | None |
| IRQ/3/2022 | None | Water Buffalo | WRLFMD | Iraq | SAT2/XIV | None |
| IRQ/3/2023 | None | Cattle | WRLFMD | Iraq | SAT2/XIV | None |
| IRQ/7/2023 | None | Cattle | WRLFMD | Iraq | SAT2/XIV | None |
| IRQ/8/2023 | None | Cattle | WRLFMD | Iraq | SAT2/XIV | None |
| JOR/17/2023 | None | Cattle | WRLFMD | Jordan | SAT2/XIV | None |
| JOR/18/2023 | None | Cattle | WRLFMD | Jordan | SAT2/XIV | None |
| JOR/19/2023 | None | Cattle | WRLFMD | Jordan | SAT2/XIV | None |
| JOR/22/2023 | None | Cattle | WRLFMD | Jordan | SAT2/XIV | None |
| JOR/23/2023 | None | Cattle | WRLFMD | Jordan | SAT2/XIV | None |
| JOR/25/2023 | None | Cattle | WRLFMD | Jordan | SAT2/XIV | None |
| JOR/27/2023 | None | Cattle | WRLFMD | Jordan | SAT2/XIV | None |
| OMN/1434/2023 * | None | Goat | ANSES | Oman | SAT2/XIV | None |
| OMN/1436/2023 * | None | Cattle | ANSES | Oman | SAT2/XIV | None |
| TUR/4/2023 | None | Cattle | WRLFMD | Turkiye | SAT2/XIV | None |
| TUR/5/2023 | None | Cattle | WRLFMD | Turkiye | SAT2/XIV | None |
| TUR/6/2023 | None | Cattle | WRLFMD | Turkiye | SAT2/XIV | None |
| TUR/8/2023 | None | Cattle | WRLFMD | Turkiye | SAT2/XIV | None |
| TUR/9/2023 | None | Cattle | WRLFMD | Turkiye | SAT2/XIV | None |
| TUR/10/2023 | None | Cattle | WRLFMD | Turkiye | SAT2/XIV | None |
| TUR/13/2023 | None | Cattle | WRLFMD | Turkiye | SAT2/XIV | None |
| TUR/15/2023 | None | Cattle | WRLFMD | Turkiye | SAT2/XIV | None |
| TUR/16/2023 | None | Cattle | WRLFMD | Turkiye | SAT2/XIV | None |
| TUR/19/2023 | None | Cattle | WRLFMD | Turkiye | SAT2/XIV | None |
| TUR/20/2023a | None | Cattle | WRLFMD | Turkiye | SAT2/XIV | None |
| TUR/79/2023 * | None | Cattle | FMDI | Turkiye | SAT2/XIV | None |
| TUR/20/2023b | None | Cattle | WRLFMD | Turkiye | SAT2/XIV | None |
| ETH/9/2022 | PQ847921 | Cattle | WRLFMD | Ethiopia | SAT2/XIV | None |
| ETH/10/2022 | PQ847922 | Cattle | WRLFMD | Ethiopia | SAT2/XIV | None |
| ETH/105/2022 | PQ847953 | Cattle | WRLFMD | Ethiopia | SAT2/XIV | None |
| ETH/106/2022 | PQ847954 | Cattle | WRLFMD | Ethiopia | SAT2/XIV | None |
| ETH/107/2022 | PQ847955 | Cattle | WRLFMD | Ethiopia | SAT2/XIV | None |
| ETH/108/2022 | PQ847956 | Cattle | WRLFMD | Ethiopia | SAT2/XIV | None |
| ETH/109/2022 | PQ847957 | Cattle | WRLFMD | Ethiopia | SAT2/XIV | None |
| ETH/11/2022 | PQ847923 | Cattle | WRLFMD | Ethiopia | SAT2/XIV | None |
| ETH/110/2022 | PQ847958 | Cattle | WRLFMD | Ethiopia | SAT2/XIV | None |
| ETH/111/2022 | PQ847959 | Cattle | WRLFMD | Ethiopia | SAT2/XIV | None |
| ETH/112/2022 | PQ847960 | Cattle | WRLFMD | Ethiopia | SAT2/XIV | None |
| ETH/12/2022 | PQ847924 | Cattle | WRLFMD | Ethiopia | SAT2/XIV | None |
| ETH/13/2022 | PQ847925 | Cattle | WRLFMD | Ethiopia | SAT2/XIV | None |
| ETH/16/2022 | PQ847926 | Cattle | WRLFMD | Ethiopia | SAT2/XIV | None |
| ETH/17/2022 | PQ847927 | Cattle | WRLFMD | Ethiopia | SAT2/XIV | None |
| ETH/20/2022 | PQ847928 | Cattle | WRLFMD | Ethiopia | SAT2/XIV | None |
| ETH/28/2022 | PQ847931 | Cattle | WRLFMD | Ethiopia | SAT2/XIV | None |
| ETH/29/2022 | PQ847932 | Cattle | WRLFMD | Ethiopia | SAT2/XIV | None |
| ETH/31/2022 | PQ847933 | Cattle | WRLFMD | Ethiopia | SAT2/XIV | None |
| ETH/34/2022 | PQ847934 | Cattle | WRLFMD | Ethiopia | SAT2/XIV | None |
| ETH/43/2022 | PQ847935 | Cattle | WRLFMD | Ethiopia | SAT2/XIV | None |
| ETH/44/2022 | PQ847936 | Cattle | WRLFMD | Ethiopia | SAT2/XIV | None |
| ETH/47/2022 | PQ847937 | Cattle | WRLFMD | Ethiopia | SAT2/XIV | None |
| ETH/48/2022 | PQ847938 | Cattle | WRLFMD | Ethiopia | SAT2/XIV | None |
| ETH/49/2022 | PQ847939 | Cattle | WRLFMD | Ethiopia | SAT2/XIV | None |
| ETH/50/2022 | PQ847940 | Cattle | WRLFMD | Ethiopia | SAT2/XIV | None |

FMDV VP1 Sequences included in the Phylogenetic Tree (continued)

| Sequence Name | GenBank Accession | Host | Ref Lab | Country | FMDV Taxonomy | Pubmed Reference Number |
|-------------------|-------------------|---------------|-----------|----------|---------------|-------------------------|
| ETH/51/2022 | PQ847941 | Cattle | WRLFMD | Ethiopia | SAT2/XIV | None |
| ETH/57/2022 | PQ847942 | Cattle | WRLFMD | Ethiopia | SAT2/XIV | None |
| ETH/61/2022 | PQ847943 | Cattle | WRLFMD | Ethiopia | SAT2/XIV | None |
| ETH/62/2022 | PQ847944 | Cattle | WRLFMD | Ethiopia | SAT2/XIV | None |
| ETH/63/2022 | PQ847945 | Cattle | WRLFMD | Ethiopia | SAT2/XIV | None |
| ETH/64/2022 | PQ847946 | Cattle | WRLFMD | Ethiopia | SAT2/XIV | None |
| ETH/66/2022 | PQ847947 | Cattle | WRLFMD | Ethiopia | SAT2/XIV | None |
| ETH/77/2022 | PQ847950 | Cattle | WRLFMD | Ethiopia | SAT2/XIV | None |
| ETH/84/2022 | PQ847951 | Cattle | WRLFMD | Ethiopia | SAT2/XIV | None |
| ETH/90/2022 | PQ847952 | Cattle | WRLFMD | Ethiopia | SAT2/XIV | None |
| ETH/75/2022a | PQ847948 | Cattle | WRLFMD | Ethiopia | SAT2/XIV | None |
| ETH/75/2022b | PQ847949 | Cattle | WRLFMD | Ethiopia | SAT2/XIV | None |
| ETH/1/2023 | PQ847961 | Cattle | WRLFMD | Ethiopia | SAT2/XIV | None |
| ETH/2/2023 | PQ847962 | Cattle | WRLFMD | Ethiopia | SAT2/XIV | None |
| ETH/3/2023 | PQ847963 | Cattle | WRLFMD | Ethiopia | SAT2/XIV | None |
| ETH/4/2023 | PQ847964 | Cattle | WRLFMD | Ethiopia | SAT2/XIV | None |
| IRQ/NJAN39/2023 * | LC801596 | Cattle | BAGHDAD-U | Iraq | SAT2 | None |
| IRQ/NJJ84/2023 * | LC801597 | Water Buffalo | BAGHDAD-U | Iraq | SAT2 | None |
| IRQ/NJJ168/2023 * | LC801600 | Water Buffalo | BAGHDAD-U | Iraq | SAT2 | None |
| IRQ/NJJ259/2023 * | LC801604 | Cattle | BAGHDAD-U | Iraq | SAT2 | None |
| IRQ/NJJ435/2022 * | LC801605 | Cattle | BAGHDAD-U | Iraq | SAT2 | None |
| 1_JOR_2023 * | PP093354 | Cattle | JUST | Jordan | SAT2/XIV | None |
| 4_JOR_2023 * | PP093357 | Cattle | JUST | Jordan | SAT2/XIV | None |
| 8_JOR_2023 * | PP093361 | Cattle | JUST | Jordan | SAT2/XIV | None |
| 10_JOR_2023 * | PP093363 | Cattle | JUST | Jordan | SAT2/XIV | None |
| 11_JOR_2023 * | PP093364 | Cattle | JUST | Jordan | SAT2/XIV | None |
| WGS_01_JOR/2023 * | PP112252 | Cattle | JUST | Jordan | SAT2/XIV | None |
| WGS_02_JOR/2023 * | PP112253 | Cattle | JUST | Jordan | SAT2/XIV | None |
| WGS_03_JOR/2023 * | PP112254 | Cattle | JUST | Jordan | SAT2/XIV | None |
| WGS_04_JOR/2023 * | PP112255 | Cattle | JUST | Jordan | SAT2/XIV | None |
| WGS_05_JOR/2023 * | PP112256 | Cattle | JUST | Jordan | SAT2/XIV | None |
| WGS_08_JOR/2023 * | PP112259 | Cattle | JUST | Jordan | SAT2/XIV | None |

* Not a WRLFMD Reference Number;

† Not Available