

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

Genotyping Report

FMDV serotype: O
Country: Niger
Year: 2021
Batch: WRLMEG/2022/00027
No. of sequences: 3
Report date: 4th August 2022
Report generated by: Nick Knowles
Report checked by: Don King

This report has been prepared on behalf of the Laboratoire Central de l'Élevage (LABOCEL), Niger and the European Union Reference Laboratory (EURL), FAO Reference Centre & WOAHP Reference Laboratory for Foot-and-Mouth Disease chez Agence nationale de sécurité sanitaire –ANSES, Maisons-Alfort, Île-de-France, France and covers VP1 sequences submitted to the WRLFMD on 04/08/2022.



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

email: reporting@pirbright.ac.uk

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| | |
|---|------------------|
| Virus sample name: | NGR/22Z9694/21 |
| Sender reference: | Tam4 |
| Location of origin: | Tamou, Tillaberi |
| Country of origin: | Niger |
| Date of collection: | 17/10/2021 |
| Host species: | bovine |
| Serotype: | O |
| Topotype: | EA-3 |
| Lineage: | |
| Sublineage: | |
| Sequence length: | 633 |
| Ambiguities: | 0 |
| Material submitted for sequencing: | orig sample |
| Harvest date of material: | n/a |
| Primers: | n/a |
| Received for sequencing: | n/a |
| Created: | 04/08/2022 |
| Last updated: | 04/08/2022 |
| VIBASys IDs: sample 51374, genome 51375, sequence viba_51376, sequencing info 51377 | |

Most Closely Related Sequences

| sequence | virus name | Host | % Id. | # Ambig. | serotype | topotype | lineage | sublineage |
|------------|----------------|--------|-------|----------|----------|----------|---------|------------|
| viba_51380 | NGR/Z229696/21 | bovine | 99.8 | 0 | O | EA-3 | | |
| viba_50178 | NIG/12/2021 | cattle | 99.5 | 0 | O | EA-3 | | |
| viba_50206 | NIG/21/2021 | cattle | 99.4 | 0 | O | EA-3 | | |
| viba_50214 | NIG/23/2021 | cattle | 99.4 | 0 | O | EA-3 | | |
| viba_50198 | NIG/19/2021 | cattle | 99.4 | 0 | O | EA-3 | | |
| viba_50210 | NIG/22/2021 | cattle | 99.4 | 0 | O | EA-3 | | |
| viba_50202 | NIG/20/2021 | cattle | 99.4 | 0 | O | EA-3 | | |
| viba_50126 | TUN/22Z996/22 | cattle | 99.1 | 0 | O | EA-3 | | |
| viba_50114 | TUN/22Z756/22 | cattle | 99.1 | 0 | O | EA-3 | | |
| viba_49566 | NIG/9/2021 | cattle | 99.1 | 0 | O | EA-3 | | |

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_116 | SUD/2/86 | bovine | 88.6 | 0 | O | EA-3 | | |
| viba_50 | UGA/17/98 | | 85.5 | 0 | O | EA-4 | | |
| viba_854 | ETH/1/2007 | cattle | 84.6 | 0 | O | EA-3 | | |
| viba_104 | GHA/5/93 | bovine | 84.4 | 0 | O | WA | | |
| viba_30238 | MUR/19/2016 | cattle | 84.3 | 0 | O | ME-SA | Ind-2001 | e |
| viba_408 | ETH/3/2004 | cattle | 83.7 | 0 | O | EA-3 | | |
| viba_68 | TAI/189/87 | bovine | 83.5 | 0 | O | SEA | | |
| viba_285 | UKG/35/2001 | porcine | 83.5 | 0 | O | ME-SA | PanAsia | |
| viba_85 | UGA/3/2002 | | 83.3 | 0 | O | EA-2 | | |
| viba_293 | BHU/3/2009 | cattle | 83.3 | 0 | O | ME-SA | Ind-2001 | d |

| | |
|---|------------------|
| Virus sample name: | NGR/Z229696/21 |
| Sender reference: | Tam6 |
| Location of origin: | Tamou, Tillaberi |
| Country of origin: | Niger |
| Date of collection: | 17/10/2021 |
| Host species: | bovine |
| Serotype: | O |
| Topotype: | EA-3 |
| Lineage: | |
| Sublineage: | |
| Sequence length: | 633 |
| Ambiguities: | 0 |
| Material submitted for sequencing: | orig sample |
| Harvest date of material: | n/a |
| Primers: | n/a |
| Received for sequencing: | n/a |
| Created: | 04/08/2022 |
| Last updated: | 04/08/2022 |
| VIBASys IDs: sample 51378, genome 51379, sequence viba_51380, sequencing info 51381 | |

Most Closely Related Sequences

| sequence | virus name | Host | % Id. | # Ambig. | serotype | topotype | lineage | sublineage |
|------------|----------------|--------|-------|----------|----------|----------|---------|------------|
| viba_51376 | NGR/22Z9694/21 | bovine | 99.8 | 0 | O | EA-3 | | |
| viba_50178 | NIG/12/2021 | cattle | 99.4 | 0 | O | EA-3 | | |
| viba_50206 | NIG/21/2021 | cattle | 99.2 | 0 | O | EA-3 | | |
| viba_50214 | NIG/23/2021 | cattle | 99.2 | 0 | O | EA-3 | | |
| viba_50198 | NIG/19/2021 | cattle | 99.2 | 0 | O | EA-3 | | |
| viba_50210 | NIG/22/2021 | cattle | 99.2 | 0 | O | EA-3 | | |
| viba_50202 | NIG/20/2021 | cattle | 99.2 | 0 | O | EA-3 | | |
| viba_50126 | TUN/22Z996/22 | cattle | 98.9 | 0 | O | EA-3 | | |
| viba_50114 | TUN/22Z756/22 | cattle | 98.9 | 0 | O | EA-3 | | |
| viba_49566 | NIG/9/2021 | cattle | 98.9 | 0 | O | EA-3 | | |

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_116 | SUD/2/86 | bovine | 88.5 | 0 | O | EA-3 | | |
| viba_50 | UGA/17/98 | | 85.3 | 0 | O | EA-4 | | |
| viba_854 | ETH/1/2007 | cattle | 84.5 | 0 | O | EA-3 | | |
| viba_104 | GHA/5/93 | bovine | 84.4 | 0 | O | WA | | |
| viba_30238 | MUR/19/2016 | cattle | 84.1 | 0 | O | ME-SA | Ind-2001 | e |
| viba_408 | ETH/3/2004 | cattle | 83.5 | 0 | O | EA-3 | | |
| viba_85 | UGA/3/2002 | | 83.5 | 0 | O | EA-2 | | |
| viba_285 | UKG/35/2001 | porcine | 83.4 | 0 | O | ME-SA | PanAsia | |
| viba_68 | TAI/189/87 | bovine | 83.3 | 0 | O | SEA | | |
| viba_293 | BHU/3/2009 | cattle | 83.2 | 0 | O | ME-SA | Ind-2001 | d |

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|---|------------------|
| Virus sample name: | NGR/22Z9718/21 |
| Sender reference: | BFJ1 |
| Location of origin: | Kollo, Tillaberi |
| Country of origin: | Niger |
| Date of collection: | 03/12/2021 |
| Host species: | bovine |
| Serotype: | O |
| Topotype: | EA-3 |
| Lineage: | |
| Sublineage: | |
| Sequence length: | 633 |
| Ambiguities: | 0 |
| Material submitted for sequencing: | orig sample |
| Harvest date of material: | n/a |
| Primers: | n/a |
| Received for sequencing: | n/a |
| Created: | 04/08/2022 |
| Last updated: | 04/08/2022 |
| VIBASys IDs: sample 51382, genome 51383, sequence viba_51384, sequencing info 51385 | |

Most Closely Related Sequences

| sequence | virus name | Host | % Id. | # Ambig. | serotype | topotype | lineage | sublineage |
|------------|----------------|--------|-------|----------|----------|----------|---------|------------|
| viba_50178 | NIG/12/2021 | cattle | 99.4 | 0 | O | EA-3 | | |
| viba_50206 | NIG/21/2021 | cattle | 99.2 | 0 | O | EA-3 | | |
| viba_50214 | NIG/23/2021 | cattle | 99.2 | 0 | O | EA-3 | | |
| viba_50198 | NIG/19/2021 | cattle | 99.2 | 0 | O | EA-3 | | |
| viba_50210 | NIG/22/2021 | cattle | 99.2 | 0 | O | EA-3 | | |
| viba_50202 | NIG/20/2021 | cattle | 99.2 | 0 | O | EA-3 | | |
| viba_50638 | ALG/1/2022 | cattle | 99.1 | 0 | O | EA-3 | | |
| viba_50126 | TUN/22Z996/22 | cattle | 98.9 | 0 | O | EA-3 | | |
| viba_51376 | NGR/22Z9694/21 | bovine | 98.9 | 0 | O | EA-3 | | |
| viba_50114 | TUN/22Z756/22 | cattle | 98.9 | 0 | O | EA-3 | | |

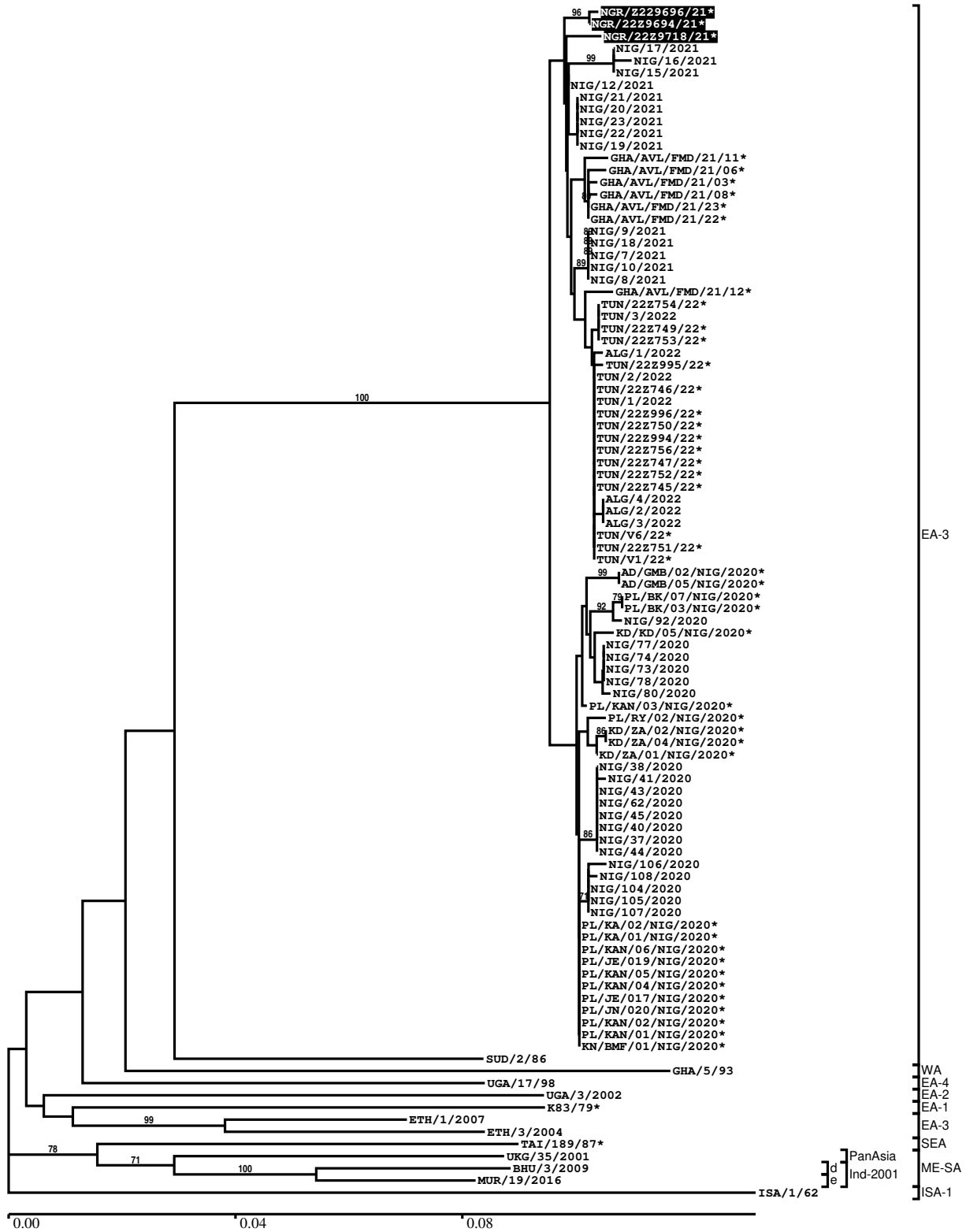
Most Closely Related Prototype Sequences

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

| sequence | virus name | Host | % Id. | # Ambig. | serotype | topotype | lineage | sublineage |
|------------|-------------|---------|-------|----------|----------|----------|----------|------------|
| viba_116 | SUD/2/86 | bovine | 88.3 | 0 | O | EA-3 | | |
| viba_50 | UGA/17/98 | | 85.3 | 0 | O | EA-4 | | |
| viba_854 | ETH/1/2007 | cattle | 85.0 | 0 | O | EA-3 | | |
| viba_104 | GHA/5/93 | bovine | 84.4 | 0 | O | WA | | |
| viba_30238 | MUR/19/2016 | cattle | 83.7 | 0 | O | ME-SA | Ind-2001 | e |
| viba_523 | K83/79 | | 83.6 | 0 | O | EA-1 | | |
| viba_408 | ETH/3/2004 | cattle | 83.5 | 0 | O | EA-3 | | |
| viba_285 | UKG/35/2001 | porcine | 83.4 | 0 | O | ME-SA | PanAsia | |
| viba_68 | TAI/189/87 | bovine | 83.3 | 0 | O | SEA | | |
| viba_85 | UGA/3/2002 | | 83.3 | 0 | O | EA-2 | | |

Report on FMDV O in Niger in 2021

Batch: WRLMEG/2022/00027



*, not a WRLFMD Reference Number

Analysis Parameters

VP1 subsequence extractor: vp1_O
 Query sequence set: WRLMEG/2022/00027-Niger-O (3 sequences)
 Sequence database set: allseqs_O (5693 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 |
|--------------------|-----------|---------|------------|---------|-----------------------|
| NGR/Z229696/21* | n/a | bovine | ANSES | Niger | EA-3 |
| NGR/22Z9694/21* | n/a | bovine | ANSES | Niger | EA-3 |
| NGR/22Z9718/21* | n/a | bovine | ANSES | Niger | EA-3 |
| NIG/17/2021 | n/a | cattle | WRLFMD | Nigeria | EA-3 |
| NIG/16/2021 | n/a | cattle | WRLFMD | Nigeria | EA-3 |
| NIG/15/2021 | n/a | cattle | WRLFMD | Nigeria | EA-3 |
| NIG/12/2021 | n/a | cattle | WRLFMD | Nigeria | EA-3 |
| NIG/21/2021 | n/a | cattle | WRLFMD | Nigeria | EA-3 |
| NIG/20/2021 | n/a | cattle | WRLFMD | Nigeria | EA-3 |
| NIG/23/2021 | n/a | cattle | WRLFMD | Nigeria | EA-3 |
| NIG/22/2021 | n/a | cattle | WRLFMD | Nigeria | EA-3 |
| NIG/19/2021 | n/a | cattle | WRLFMD | Nigeria | EA-3 |
| GHA/AVL/FMD/21/11* | n/a | cattle | NCFAD/CFIA | Ghana | EA-3 |
| GHA/AVL/FMD/21/06* | n/a | cattle | NCFAD/CFIA | Ghana | EA-3 |
| GHA/AVL/FMD/21/03* | n/a | cattle | NCFAD/CFIA | Ghana | EA-3 |
| GHA/AVL/FMD/21/08* | n/a | cattle | NCFAD/CFIA | Ghana | EA-3 |
| GHA/AVL/FMD/21/23* | n/a | cattle | NCFAD/CFIA | Ghana | EA-3 |
| GHA/AVL/FMD/21/22* | n/a | cattle | NCFAD/CFIA | Ghana | EA-3 |
| NIG/9/2021 | n/a | cattle | WRLFMD | Nigeria | EA-3 |
| NIG/18/2021 | n/a | cattle | WRLFMD | Nigeria | EA-3 |
| NIG/7/2021 | n/a | cattle | WRLFMD | Nigeria | EA-3 |
| NIG/10/2021 | n/a | cattle | WRLFMD | Nigeria | EA-3 |
| NIG/8/2021 | n/a | cattle | WRLFMD | Nigeria | EA-3 |
| GHA/AVL/FMD/21/12* | n/a | cattle | NCFAD/CFIA | Ghana | EA-3 |
| TUN/22Z754/22* | n/a | cattle | ANSES | Tunisia | EA-3 |
| TUN/3/2022 | n/a | cattle | WRLFMD | Tunisia | EA-3 |
| TUN/22Z749/22* | n/a | cattle | ANSES | Tunisia | EA-3 |
| TUN/22Z753/22* | n/a | cattle | ANSES | Tunisia | EA-3 |
| ALG/1/2022 | n/a | cattle | WRLFMD | Algeria | EA-3 |
| TUN/22Z995/22* | n/a | cattle | ANSES | Tunisia | EA-3 |
| TUN/2/2022 | n/a | cattle | WRLFMD | Tunisia | EA-3 |
| TUN/22Z746/22* | n/a | cattle | ANSES | Tunisia | EA-3 |
| TUN/1/2022 | n/a | cattle | WRLFMD | Tunisia | EA-3 |
| TUN/22Z996/22* | n/a | cattle | ANSES | Tunisia | EA-3 |
| TUN/22Z750/22* | n/a | cattle | ANSES | Tunisia | EA-3 |
| TUN/22Z994/22* | n/a | cattle | ANSES | Tunisia | EA-3 |

continued on next page

| label | accession | host(s) | lab | country | taxonomic information |
|---------------------|-----------|---------|------------|----------------|-----------------------|
| TUN/22Z756/22* | n/a | cattle | ANSES | Tunisia | EA-3 |
| TUN/22Z747/22* | n/a | cattle | ANSES | Tunisia | EA-3 |
| TUN/22Z752/22* | n/a | cattle | ANSES | Tunisia | EA-3 |
| TUN/22Z745/22* | n/a | cattle | ANSES | Tunisia | EA-3 |
| ALG/4/2022 | n/a | cattle | WRLFMD | Algeria | EA-3 |
| ALG/2/2022 | n/a | cattle | WRLFMD | Algeria | EA-3 |
| ALG/3/2022 | n/a | cattle | WRLFMD | Algeria | EA-3 |
| TUN/V6/22* | n/a | cattle | ANSES | Tunisia | EA-3 |
| TUN/22Z751/22* | n/a | cattle | ANSES | Tunisia | EA-3 |
| TUN/V1/22* | n/a | cattle | ANSES | Tunisia | EA-3 |
| AD/GMB/02/NIG/2020* | n/a | cattle | NCFAD/NVRI | Nigeria | EA-3 |
| AD/GMB/05/NIG/2020* | n/a | cattle | NCFAD/NVRI | Nigeria | EA-3 |
| PL/BK/07/NIG/2020* | n/a | cattle | NCFAD/NVRI | Nigeria | EA-3 |
| PL/BK/03/NIG/2020* | n/a | cattle | NCFAD/NVRI | Nigeria | EA-3 |
| NIG/92/2020 | n/a | cattle | WRLFMD | Nigeria | EA-3 |
| KD/KD/05/NIG/2020* | n/a | cattle | NCFAD/NVRI | Nigeria | EA-3 |
| NIG/77/2020 | n/a | cattle | WRLFMD | Nigeria | EA-3 |
| NIG/74/2020 | n/a | cattle | WRLFMD | Nigeria | EA-3 |
| NIG/73/2020 | n/a | cattle | WRLFMD | Nigeria | EA-3 |
| NIG/78/2020 | n/a | sheep | WRLFMD | Nigeria | EA-3 |
| NIG/80/2020 | n/a | sheep | WRLFMD | Nigeria | EA-3 |
| PL/KAN/03/NIG/2020* | n/a | cattle | NCFAD/NVRI | Nigeria | EA-3 |
| PL/RY/02/NIG/2020* | n/a | cattle | NCFAD/NVRI | Nigeria | EA-3 |
| KD/ZA/02/NIG/2020* | n/a | cattle | NCFAD/NVRI | Nigeria | EA-3 |
| KD/ZA/04/NIG/2020* | n/a | cattle | NCFAD/NVRI | Nigeria | EA-3 |
| KD/ZA/01/NIG/2020* | n/a | cattle | NCFAD/NVRI | Nigeria | EA-3 |
| NIG/38/2020 | n/a | cattle | WRLFMD | Nigeria | EA-3 |
| NIG/41/2020 | n/a | cattle | WRLFMD | Nigeria | EA-3 |
| NIG/43/2020 | n/a | cattle | WRLFMD | Nigeria | EA-3 |
| NIG/62/2020 | n/a | cattle | WRLFMD | Nigeria | EA-3 |
| NIG/45/2020 | n/a | sheep | WRLFMD | Nigeria | EA-3 |
| NIG/40/2020 | n/a | cattle | WRLFMD | Nigeria | EA-3 |
| NIG/37/2020 | n/a | cattle | WRLFMD | Nigeria | EA-3 |
| NIG/44/2020 | n/a | cattle | WRLFMD | Nigeria | EA-3 |
| NIG/106/2020 | n/a | cattle | WRLFMD | Nigeria | EA-3 |
| NIG/108/2020 | n/a | cattle | WRLFMD | Nigeria | EA-3 |
| NIG/104/2020 | n/a | cattle | WRLFMD | Nigeria | EA-3 |
| NIG/105/2020 | n/a | cattle | WRLFMD | Nigeria | EA-3 |
| NIG/107/2020 | n/a | cattle | WRLFMD | Nigeria | EA-3 |
| PL/KA/02/NIG/2020* | n/a | cattle | NCFAD/NVRI | Nigeria | EA-3 |
| PL/KA/01/NIG/2020* | n/a | cattle | NCFAD/NVRI | Nigeria | EA-3 |
| PL/KAN/06/NIG/2020* | n/a | cattle | NCFAD/NVRI | Nigeria | EA-3 |
| PL/JE/019/NIG/2020* | n/a | cattle | NCFAD/NVRI | Nigeria | EA-3 |
| PL/KAN/05/NIG/2020* | n/a | cattle | NCFAD/NVRI | Nigeria | EA-3 |
| PL/KAN/04/NIG/2020* | n/a | cattle | NCFAD/NVRI | Nigeria | EA-3 |
| PL/JE/017/NIG/2020* | n/a | cattle | NCFAD/NVRI | Nigeria | EA-3 |
| PL/JN/020/NIG/2020* | n/a | cattle | NCFAD/NVRI | Nigeria | EA-3 |
| PL/KAN/02/NIG/2020* | n/a | cattle | NCFAD/NVRI | Nigeria | EA-3 |
| PL/KAN/01/NIG/2020* | n/a | cattle | NCFAD/NVRI | Nigeria | EA-3 |
| KN/BMF/01/NIG/2020* | n/a | cattle | NCFAD/NVRI | Nigeria | EA-3 |
| SUD/2/86 | DQ165075 | bovine | WRLFMD | Sudan | EA-3 |
| GHA/5/93 | AJ303488 | bovine | WRLFMD | Ghana | WA |
| UGA/17/98 | HM211075 | n/a | WRLFMD | Uganda | EA-4 |
| UGA/3/2002 | DQ165077 | n/a | WRLFMD | Uganda | EA-2 |
| K83/79* | AJ303511 | n/a | WRLFMD | Kenya | EA-1 |
| ETH/1/2007 | FJ798137 | cattle | WRLFMD | Ethiopia | EA-3 |
| ETH/3/2004 | FJ798109 | cattle | WRLFMD | Ethiopia | EA-3 |
| TAI/189/87* | KY091288 | bovine | TRRL | Thailand | SEA |
| UKG/35/2001 | AJ539141 | porcine | PIADC | United Kingdom | ME-SA/PanAsia |
| BHU/3/2009 | KM921814 | cattle | WRLFMD | Bhutan | ME-SA/Ind-2001/d |
| MUR/19/2016 | MG972510 | cattle | WRLFMD | Mauritius | ME-SA/Ind-2001/e |
| ISA/1/62 | AJ303500 | n/a | WRLFMD | Indonesia | ISA-1 |

*, not a WRLFMD Reference Number

n/a, not available