

WOAH Reference Laboratory Reports Activities 2023

Activities in 2023

This report has been submitted : 1 juillet 2024 18:41

Laboratory Information

Name of disease (or topic) for which you are a designated WOAH Reference Laboratory:	Rift valley fever
Address of laboratory:	No. 100 Old Soutpan Road, Onderstepoort, 0110, Gauteng Province, South Africa
Tel.:	+27-12 529 91 17
E-mail address:	LubisiA@arc.agric.za
Website:	https://www.arc.agric.za/
Name (including Title) of Head of Laboratory (Responsible Official):	Dr. Arshad Mather - Acting Senior Manager Research: Animal Health and Protection
Name (including Title and Position) of WOAH Reference Expert:	Dr. Baratang Alison Lubisi - Research Team Manager: Diagnostic Services
Which of the following defines your laboratory? Check all that apply:	Governmental

TOR1: DIAGNOSTIC METHODS

1. Did your laboratory perform diagnostic tests for the specified disease/topic for purposes such as disease diagnosis, screening of animals for export, surveillance, etc.? (Not for quality control, proficiency testing or staff training)

Yes

Diagnostic Test	Indicated in WOAH Manual (Yes/No)	Total number of test performed last year	
		Nationally	Internationally
Indirect diagnostic tests			
Indirect IgG ELISA		720	3
Capture IgM ELISA		720	3
Direct diagnostic tests			
Real Time RT-PCR		91	0

TOR2: REFERENCE MATERIAL

2. Did your laboratory produce or supply imported standard reference reagents officially recognised by WOAH?

No

3. Did your laboratory supply standard reference reagents (nonWOAH-approved) and/or other diagnostic reagents to WOAH Members?

No

4. Did your laboratory produce vaccines?

Not applicable

5. Did your laboratory supply vaccines to WOAH Members?

Not applicable

TOR3: NEW PROCEDURES

6. Did your laboratory develop new diagnostic methods for the designated pathogen or disease?

Yes

NAME OF THE NEW TEST OR DIAGNOSTIC METHOD DEVELOPED	DESCRIPTION AND REFERENCES (PUBLICATION, WEBSITE, ETC.)
RVF Inhibition ELISA	An inhibition ELISA to detect antibodies to Rift Valley fever virus (RVFV) in sera of infected or vaccinated animals was developed. The test is based on a recombinant RVFV N protein and a recombinant single chain antibody (scFv F3) specific for this protein. These reagents are well characterised and renewable. Antibodies in animal sera can inhibit the binding of scFv F3 to the N protein. This year, pre-coated plates were tested and shown to be stable for up to 15 months thus far using Stabilcoat as stabiliser/blocker. The scFv on the other hand, can only be stored frozen for 9 months. Freeze drying of the scFv is going to be tested next for a longer storage option. Sera (540) previously tested with the NICD ELISA were tested with the inhibition ELISA and the results must be compared with those of the virus neutralisation test (VNT) for statistical analyses. Full validation of the test is planned for next year.

7. Did your laboratory validate diagnostic methods according to WOAHS Standards for the designated pathogen or disease?

No

8. Did your laboratory develop new vaccines for the designated pathogen or disease?

No

9. Did your laboratory validate vaccines according to WOAHS Standards for the designated pathogen or disease?

No

TOR4: DIAGNOSTIC TESTING FACILITIES

10. Did your laboratory carry out diagnostic testing for other WOAHS Members?

Yes

NAME OF WOAHS MEMBER COUNTRY SEEKING ASSISTANCE	DATE	WHICH DIAGNOSTIC TEST USED	NO. SAMPLES RECEIVED FOR PROVISION OF DIAGNOSTIC SUPPORT	NO. SAMPLES RECEIVED FOR PROVISION OF CONFIRMATORY DIAGNOSES
NAMIBIA	2023-08-18	Indirect IgG ELISA Capture IgM ELISA	3	0

11. Did your laboratory provide expert advice in technical consultancies on the request of an WOAHS Member?

No

TOR5: COLLABORATIVE SCIENTIFIC AND TECHNICAL STUDIES

12. Did your laboratory participate in international scientific studies in collaboration with WOAHS Members other than the own?

No

13. In exercising your activities, have you identified any regulatory research needs* relevant for WOAHS?

No

TOR6: EPIZOOLOGICAL DATA

14. Did your Laboratory collect epidemiological data relevant to international disease control?

Yes

IF THE ANSWER IS YES, PLEASE PROVIDE DETAILS OF THE DATA COLLECTED:

Sera were tested to determine Rift valley fever seropositivity and seroprevalence in different susceptible species.

15. Did your laboratory disseminate epidemiological data that had been processed and analysed?

Yes

IF THE ANSWER IS YES, PLEASE PROVIDE DETAILS OF THE DATA COLLECTED:

A scientific paper was published in a peer reviewed journal. Presentations were made at international conferences and research stakeholder meetings.

16. What method of dissemination of information is most often used by your laboratory? (Indicate in the appropriate box the number by category and list the details in the box)

a) Articles published in peer-reviewed journals:

1

Lubisi, B.A., Mutowembwa, P.B., Ndouvhada, P.N., Odendaal, L., Bastos, A.D.S., & Penrith, M.L. (2023). *Experimental Infection of Domestic Pigs (Sus scrofa) with Rift Valley Fever Virus. Viruses, 16;15(2):545. doi: 10.3390/v15020545.*

b) International conferences:

2

1. Lubisi, B.A., Mutowembwa, B., Ndouvhada, P.N., Odendaal, L., Bastos, A.D., & Penrith, M-L., 2023. *Investigating the domestic pig (Sus scrofa domesticus) as a potential model to study Rift valley fever. 25th Regional Commission for Africa Conference, Gaborone, Botswana, 20 – 24 February 2023*

2. Lubisi, B.A., 2023. *Preparedness for climate change: Disease outbreak surveillance and epidemiology of Rift valley fever in South Africa. Climate Resilient Agriculture Seminar for the 13th Meeting of BRICS Ministers of Agriculture, 9 August 2023, Limpopo, South Africa*

c) National conferences:

d) Other (Provide website address or link to appropriate information):

1

Lubisi, B.A., 2023. *Evaluation and Comparison of 3 ELISAs for Detection of Rift Valley Fever Antibodies in Sheep Sera. EcoHealth Alliance's Rift valley fever project stakeholder meeting, Petoria, South Africa, 3 August 2023.*

TOR7: SCIENTIFIC AND TECHNICAL TRAINING

17. Did your laboratory provide scientific and technical training to laboratory personnel from other WOAHA Members?

No

TOR8: QUALITY ASSURANCE

18. Does your laboratory have a Quality Management System?

Yes

Quality management system adopted	Certificate scan (PDF, JPG, PNG format)	
ISO 17025	SANAS Certificate	SANAS Certificate V0001 - December 2023.pdf

19. Is your quality management system accredited?

Yes

Test for which your laboratory is accredited	Accreditation body
Indirect IgG ELISA	South African National Accreditation System (SANAS)
Capture IgM ELISA	South African National Accreditation System (SANAS)
qRT-PCR	South African National Accreditation System (SANAS)

20. Does your laboratory maintain a "biorisk management system" for the pathogen and the disease concerned?

Yes

The laboratory adheres to good laboratory practices and has standard operating procedures (SOPs) and fit for purpose equipment and facilities to ensure biosecurity, biosafety, and biocontainment of pathogens.

TOR9: SCIENTIFIC MEETINGS

21. Did your laboratory organise scientific meetings related to the pathogen in question on behalf of WOA?H?

No

22. Did your laboratory participate in scientific meetings related to the pathogen in question on behalf of WOA?H?

No

TOR10: NETWORK WITH WOA?H REFERENCE LABORATORIES

23. Did your laboratory exchange information with other WOA?H Reference Laboratories designated for the same pathogen or disease?

Yes

24. Do you network (collaborate or share information) with other WOA?H Reference Laboratories designated for the same pathogen?

Yes

NETWORK/DISEASE	ROLE OF YOUR LABORATORY (PARTICIPANT, ORGANISER, ETC)	NO. PARTICIPANTS	PARTICIPATING WOA?H REF. LABS
Rift valley fever	Participant	16	French Agricultural Research Centre for International Development (CIRAD)

25. Did you organise or participate in inter-laboratory proficiency tests with WOA?H Reference Laboratories designated for the same pathogen?

Yes

PURPOSE OF THE PROFICIENCY TESTS: 1	ROLE OF YOUR REFERENCE LABORATORY (ORGANISER/ PARTICIPANT)	NO. PARTICIPANTS	PARTICIPATING WOA?H REF. LABS/ ORGANISING WOA?H REF. LAB.
Quality assurance of Rift valley fever diagnostic tests	Participant	16	French Agricultural Research Centre for International Development (CIRAD)

26. Did your laboratory collaborate with other WOA?H Reference Laboratories for the same disease on scientific research projects for the diagnosis or control of the pathogen of interest?

No

TOR11: OTHER INTERLABORATORY PROFICIENCY TESTING

27. Did your laboratory organise or participate in inter-laboratory proficiency tests with laboratories other than WOA?H Reference Laboratories for the same pathogen?

No

TOR12: EXPERT CONSULTANTS

28. Did your laboratory place expert consultants at the disposal of WOA?H?

No

29. Additional comments regarding your report:

Yes

The laboratory receives few international samples for Rift valley fever diagnostic purposes. A plea was made to the Southern African Development Community (SADC) through the WOA?H Sub-Regional Representation for Southern Africa, for veterinary officials to submit samples for diagnostic purposes. The request also extended to research organisations for collaboration on the disease.

The Pendik Veterinary Control Institute (PVC) in Istanbul, TÜRKİYE, expressed interest to enter into a twinning project on Rift valley fever with ARC-OVR. The proposal was accepted by WOA?H, and the project will commence once funding is obtained.