

# WOAH Reference Laboratory Reports Activities 2024

This report has been submitted: 31 janvier 2025 12:36

## LABORATORY INFORMATION

<b>*Name of disease (or topic) for which you are a designated WOA Reference Laboratory:</b>	Leptospirosis
<b>*Address of laboratory:</b>	Reference Laboratory for Leptospirosis, Amsterdam University Medical Center, Department of Medical Microbiology and Infection Prevention, Meibergdreef 39. 1105 AZ Amsterdam, The Netherlands
<b>*Tel:</b>	+31205665431
<b>*E-mail address:</b>	p.ristow@amsterdamumc.nl
<b>Website:</b>	<a href="https://leptospira.amsterdamumc.org/">https://leptospira.amsterdamumc.org/</a>
<b>*Name (including Title) of Head of Laboratory (Responsible Official):</b>	Paula Carvalhal Lage von Buettner Ristow, PhD
<b>*Name (including Title and Position) of WOA Reference Expert:</b>	Paula Carvalhal Lage von Buettner Ristow, PhD
<b>*Which of the following defines your laboratory? Check all that apply:</b>	Academic institution

## 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 WOA Manual (Yes/No)	Total number of test performed last year	
Indirect diagnostic tests		Nationally	Internationally
Microscopic Agglutination Test (MAT)	Yes	64	0

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Direct diagnostic tests		Nationally	Internationally
Bacteriological culture	Yes	6	0
Real-time PCR	Yes	13	0

## TOR2: REFERENCE MATERIAL

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

No

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

Yes

Type of reagent available	Related diagnostic test	Produced/ provide	Amount supplied nationally (ml, mg)	Amount supplied internationally (ml, mg)	No. of recipient WOA?H Member Countries	Country of recipients
Rabbit antisera anti- Leptospira	Microscopic Agglutination Test	PRODUCED/ PROVIDED	0	287 mL	23	ARGENTINA, AUSTRALIA, AUSTRIA, BELGIUM, COSTA RICA, CROATIA, CZECH REPUBLIC, ECUADOR, FRANCE, GERMANY, HUNGARY, INDONESIA, ITALY, NEW ZEALAND, POLAND, SLOVENIA, SOUTH AFRICA, SPAIN, TURKEY, UGANDA, UKRAINE, UNITED KINGDOM,
Monoclonal antibodies anti- Leptospira	Microscopic Agglutination Test	PRODUCED/ PROVIDED	0	19 mL	5	BELGIUM, COSTA RICA, FRANCE, GERMANY, ITALY,
Strains	Microscopic Agglutination Test	PRODUCED/ PROVIDED	0	161 mL	21	ARGENTINA, AUSTRALIA, CZECH REPUBLIC, DENMARK, ECUADOR, FRANCE, GERMANY, HONG KONG, HUNGARY, INDONESIA, ISRAEL, MALAYSIA, NEW ZEALAND, NORWAY, POLAND,

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						SERBIA, SLOVENIA, SWITZERLAND, TURKEY, UGANDA, UNITED KINGDOM,
Culture media	Cultivating strains	PRODUCED/ PROVIDED	0	29000 mL	9	COSTA RICA, FRANCE, GERMANY, HUNGARY, INDONESIA, SERBIA, UGANDA, UNITED KINGDOM,

4. Did your laboratory produce vaccines?

No

5. Did your laboratory supply vaccines to WOA Members?

No

## TOR3: NEW PROCEDURES

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

No

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

No

## TOR4: DIAGNOSTIC TESTING FACILITIES

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

No

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

No

## TOR5: COLLABORATIVE SCIENTIFIC AND TECHNICAL STUDIES

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

Yes

Title of the study	Duration	Purpose of the study	Partners (Institutions)	WOAH Member Countries involved other than your country
Epidemiology of leptospirosis in indonesia	4 years	Study the circulating serovars and disease	BRIN	INDONESIA

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		burden		
Biofilm structure and omics	5 years	Study molecular mechanisms of biofilm formation and biofilm architecture	UFBA, UFMG, USDA	BRAZIL UNITED STATES OF AMERICA

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

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:

Ongoing research collaboration on outbreaks of leptospirosis in Zoo animals

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

No

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:

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Steinrigl, A., Willixhofer, D., Schindler, M., Richter, S., Unterweger, C., Ahmed, A. A., van der Linden, H., Mende, D. R., Pucci, N. & Steinparzer, R. Isolation and characterization of *Leptospira licerasiae* in Austrian swine — a first-time case report in Europe, *BMC Veterinary Research*, 20, 1, 348, 2024.

Hamond, C., LeCount, K., Anderson, T., Putz, E. J., Stuber, T., Hicks, J., Camp, P., van der Linden, H., Bayles, D. O., Schlater, L. K. & Nally, J. E. Isolation and characterization of saprophytic and pathogenic strains of *Leptospira* from water sources in the Midwestern United States. *Frontiers in water*, 6, 1278088, 2024.

dos Santos Ribeiro, P., Stasko, J., Shircliff, A., Fernandes, L. G., Putz, E. J., Andreasen, C., Azevedo, V., Ristow, P., Nally, J. E. Investigations into the growth and formation of biofilm by *Leptospira biflexa* at temperatures encountered during infection. *Biofilm*, 9, 100243, 2025.

Hamond Camila , Adam Emma N. , Stone Nathan E. , LeCount Karen , Anderson Tammy , Putz Ellie J. , Camp Patrick , Hicks Jessica , Stuber Tod , van der Linden Hans , Bayles Darrell O. , Sahl Jason W. , Schlater Linda K. , Wagner David M. , Nally Jarlath E. Identification of equine mares as reservoir hosts for pathogenic species of *Leptospira*. *Front. Vet. Sci.*, 2024.

b) International conferences:

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Paula Ristow. *Atualizações e desafios no estudo da leptospirose no contexto da Saúde Única (Updates and challenges in the study of leptospirosis in the context of One Health)*. Oral conference at the IV Consensos Latinoamericanos em Leptospirose Animal, 2024.

*Correlation Between Pathogenic Leptospira Burden and Soil Physicochemical Parameters in Poorly Sanitized Communities.* dos Santos Ribeiro, P., Andrade L., Neves F., Veríssimo G., Ferreira dos Santos, P., Santana, J., Passos, S., Maraes Oliveira, M., Santiago, S., Carvalho, N., Rocha Soares, S., Garcia, K., Eyre, M., Cremonese, C., Costa F., Ristow, P. Poster presentation at the 13th Conference of the International Leptospirosis Society-ILS- and the 4th Meeting of the European Leptospirosis and other rodent borne hemorrhagic fevers Society-ELS, 2024.

*Acidic pH Alters Biofilm Formation and Cell Viability in Saprophytic Leptospira Strains* Vasconcelos, L., De Melo Jurema Guimarães, J., Cordeiro Kalabric, L., Gomes, T., Oliveira, A., Lima, J., Ribeiro, P., Costa, F., Barbosa Carvalho, N., Ristow, P. Poster presentation at the 13th Conference of the International Leptospirosis Society-ILS- and the 4th Meeting of the European Leptospirosis and other rodent borne hemorrhagic fevers Society-ELS, 2024.

*Infection by Leptospira Santarosai Serovar Guaricura Strain VF52 in Hamster Animal Model.* Gomes, T.; Oliveira, A.; Barbosa, C.; Nunes, A.; Ribeiro, P.; Veríssimo, G.; Lessa, A.; Nathan, J.; Reis, M.; Costa, F.; Vilas Bôas, D.; Lilenbaum, W.; Pereira Figueira, C.; Ristow, P. Poster presentation at the 13th Conference of the International Leptospirosis Society-ILS- and the 4th Meeting of the European Leptospirosis and other rodent borne hemorrhagic fevers Society-ELS, 2024.

*Physiological Adaptations of Leptospira biflexa in Biofilm Formation.* Gomes, T, Dos Santos Ribeiro, P., Almeida, E., Correia de Carvalho, G., Pereira Figueira, C., Marques da Silva, T., Ristow, P. Poster presentation at the 13th Conference of the International Leptospirosis Society-ILS- and the 4th Meeting of the European Leptospirosis and other rodent borne hemorrhagic fevers Society-ELS, 2024

*Isolation and Characterization of Leptospire Associated with Equine Recurrent Uveitis.* dos Santos Ribeiro, P., Hamond, C., Fernandes, L., Van der Linden, H., Anderson, T., Camp, P., Stuber, T., Hicks, J., Bayles, D.O., Wollanke, B., Nally, J.E.. Poster presentation at the 13th Conference of the International Leptospirosis Society-ILS- and the 4th Meeting of the European Leptospirosis and other rodent borne hemorrhagic fevers Society-ELS, 2024.

*Biofilm formation by Leptospira at different temperatures encountered during infection and lifecycle.* Priscyla dos Santos Ribeiro, Judith Stasko, Adrienne Shircliff, Luis Guilherme Fernandes, Ellie Putz, Claire Andreasen, Vasco Azevedo, Paula Ristow, Jarlath Nally. Poster presentation at the 18th Congress of the International Union of Microbiological Societies (IUMS 2024), Florence, Italy. *Frontiers Abstract Book*. ISBN 978-2-8325-5119-6 DOI 10.3389/978-2-8325-5119-6.

*Transcriptional regulatory model of the saprophytic spirochete leptospira biflexa for biofilm development.* Paula Ristow, Larissa Vasconcelos, Mariana Parise, Douglas Parise, Priscyla dos Santos Ribeiro, Edson Luiz Folador, Flávia Aburjaile, Vasco Azevedo. Poster presentation at the 18th Congress of the International Union of Microbiological Societies (IUMS 2024), Florence, Italy. *Frontiers Abstract Book*. ISBN 978-2-8325-5119-6 DOI 10.3389/978-2-8325-5119-6.

c) National conferences:

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

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Book chapter

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Ristow, P., Robeiro, P.S.. *Espiroquetídeos. In: Trabulsi, Luiz Rachid; Alterthum, Flavio. (Org.). Microbiologia. 7a Ed. São Paulo: Atheneu, 2024, v. 1.*

## TOR7: SCIENTIFIC AND TECHNICAL TRAINING

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

Yes

a) Technical visit : 2

b) Seminars : 6

c) Hands-on training courses: 1

d) Internships (>1 month) 1

Type of technical training provided (a, b, c or d)	Country of origin of the expert(s) provided with training	No. participants from the corresponding country
C	UKRAINE	8
A	UGANDA	1
D	BRAZIL	1
B	BRAZIL	6
B	INDONESIA	1
A	AUSTRALIA	1

## TOR8: QUALITY ASSURANCE

18. Does your laboratory have a Quality Management System?

Yes

Quality management system adopted	Certificate scan (PDF, JPG, PNG format)	
NEN-EN-ISO 15189:2012	20240523 Declaration of accreditation M178-H02 signed.pdf	20240523 Declaration of accreditation M178-H02 signed.pdf

19. Is your quality management system accredited?

Yes

Test for which your laboratory is accredited	Accreditation body
Microscopic Agglutination Test	Dutch Accreditation Council
ELISA	Dutch Accreditation Council
PCR	Dutch Accreditation Council
Culture	Dutch Accreditation Council
Typing	Dutch Accreditation Council

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

Yes

Institutional biorisk procedures following national and international standards; also referenced in Manual of Diagnostic Tests and Vaccines for Terrestrial Animals, Chapter 1.1.4.

## TOR9: SCIENTIFIC MEETINGS

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

No

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

No

## TOR10: NETWORK WITH WOAHP REFERENCE LABORATORIES

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

Yes

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

No

25. Did you organise or participate in inter-laboratory proficiency tests with WOAHP Reference Laboratories designated for the same pathogen during the past 2 years?

Yes

Purpose of the proficiency test:	Role of your Reference Laboratory (organiser/ participant)	No. participating Laboratories	Participating WOAHP Ref. Labs/ organising WOAHP Ref Lab
MAT International Proficiency Testing	Organiser and participant	2	Leptospira Research Lab ICAR-NIVEDI, India; Leptospirosis Reference Laboratory, Amsterdam University Medical Center, Amsterdam, the Netherlands

26. Did your laboratory collaborate with other WOAHP 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 WOAHP Reference Laboratories for the same pathogen during the past 2 years?

Yes

Purpose for inter-laboratory test comparisons <sup>1</sup>	Role of your reference laboratory (organizer/participant)	No. participating laboratories	Name of the test	WOAHP Member Countries
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ARGENTINA, AUSTRALIA,  
AUSTRIA, BARBADOS, BELGIUM,

Assessing laboratory  
performance and  
verifying the  
accuracy and  
reliability of test  
results

Organizer and  
participant

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MAT International  
Proficiency Test

BRAZIL, CANADA, CHINA  
(PEOPLE'S REP. OF), CHINESE  
TAIPEI, COLOMBIA, COSTA RICA,  
CROATIA, CZECH REPUBLIC,  
DENMARK, DOMINICAN (REP.),  
ESTONIA, FRANCE, GERMANY,  
INDIA, INDONESIA, IRAN, ISRAEL,  
ITALY, MALAYSIA, MEXICO, NEW  
CALEDONIA, NEW ZEALAND,  
PHILIPPINES, POLAND, PORTUGAL,  
SERBIA, SLOVENIA, SPAIN, SRI  
LANKA, SWITZERLAND, THAILAND,  
THE NETHERLANDS, TURKEY,  
UGANDA, UKRAINE, UNITED  
KINGDOM, UNITED STATES OF  
AMERICA, URUGUAY, VIETNAM,

## TOR12: EXPERT CONSULTANTS

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

No

29. Additional comments regarding your report:

No