

WOAH Reference Laboratory Reports Activities 2023

Activities in 2023

This report has been submitted : 28 juin 2024 19:21

Laboratory Information

Name of disease (or topic) for which you are a designated WOA Reference Laboratory:	Campylobacteriosis
Address of laboratory:	PO Box 80.165, 3508 TD Utrecht, the Netherlands
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E-mail address:	j.wagenaar@uu.nl
Website:	https://www.uu.nl/en/organisation/faculty-of-veterinary-medicine/veterinary-research/one-health/infection-immunity/clinical-infectiology/campylobacter-fetus
Name (including Title) of Head of Laboratory (Responsible Official):	Prof. dr. Jaap A. Wagenaar
Name (including Title and Position) of WOA Reference Expert:	Prof. dr. Jaap A. Wagenaar (Chair of Division Infectious Diseases and Immunology)
Which of the following defines your laboratory? Check all that apply:	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	
		Nationally	Internationally
Indirect diagnostic tests			
no			
Direct diagnostic tests			
culture		450	50
Real-time PCR		450	50
Whole Genome Sequencing		50	39
Maldi-tof		450	50

TOR2: REFERENCE MATERIAL

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

No

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

No

4. Did your laboratory produce vaccines?

Not applicable

5. Did your laboratory supply vaccines to WOAAH 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.)
we developed a PCR to discriminate between Campylobacter fetus subspecies	method is under validation

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

No

TOR4: DIAGNOSTIC TESTING FACILITIES

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

Yes

NAME OF WOAAH 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
UNITED STATES OF AMERICA	2023-05-01	Whole Genome Sequencing	50	50

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

Yes

NAME OF THE WOAAH MEMBER COUNTRY RECEIVING A TECHNICAL CONSULTANCY	PURPOSE	HOW THE ADVICE WAS PROVIDED
UNITED KINGDOM	- Campylobacter real time PCR and detection of Campylobacter in metagenomics data - Improving culture conditions for Campylobacter infans isoaltion - Plasmid detection of Campylobacter - Evolution of Campylobacter plasmids Studies of S-layer of Campylobacter fetus (to improve diagnostics)	- NL visited UK with 7 persons to discuss Campy studies and exchange expertise. - Monthly exchange of Campy expert NL – UK and UK – NL Contact per email, exchanging expertise and WGS data
INDONESIA	- Culturing and isolation of Campylobacter fetus - Advice on isolation of C. jejuni and coli - Advice on storage of Campylobacter strains - Susceptibility testing of Campylobacter	Internship (Indonesia to NL) Technical visit and field experiment (2 persons NL to Indonesia) Online meetings Exchange expertise by e-mail Two visits of expert to Indonesia; e-mail follow-up
SPAIN	Antimicrobial resistance of Campylobacter fetus	Three-month internship (Spain to NL) Analysis of WGS data from Spain Bioinformatics course provided for Spanish intern
ARGENTINA	Isolation and detection of Campylobacter fetus	Technical advice and support per e-mail Planning to exchange DNA/primers/probes
INDIA	Isolation, culturing and identification of Campylobacter fetus	Technical advice and support per e-mail Planning to exchange DNA/primers/probes
FRANCE	Transport, isolation and identification of C. fetus	Technical advice and support per e-mail
ITALY	Advice on isolation and culturing of C. fetus	Technical advice and support per e-mail

TOR5: COLLABORATIVE SCIENTIFIC AND TECHNICAL STUDIES

12. Did your laboratory participate in international scientific studies in collaboration with WOAH 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
Campylobacter in the poultry meat production chain	ongoing	Descriptive epidemiology of Campylobacter in the poultry production chain in Sri Lanka; including susceptibility testing	Vet School Peradeniya	SRI LANKA
Bioinformatics approach and molecular analysis to identify Campylobacter fetus subspecies markers	ongoing	Study the host specificity and virulence of C. fetus subspecies	Universitas Gadjah Mada, Yogyakarta (UGM)	INDONESIA
BB LITVET-UU Collaborative Work For Implementing A New Diagnostic Strategy To Study Campylobacter Fetus In Cattle In Indonesia	ongoing	Investigation of a new diagnostic strategy for Campylobacter fetus isolation	INDONESIAN RESEARCH CENTRE FOR VETERINARY SCIENCE (IRCVS), Bogor and BRIN	INDONESIA
One Health Genomic and Metagenomic Approaches to Campylobacter and Food Safety	ongoing	Study the role of plasmids in the evolution of Campylobacter spp. and emergence of AMR	Quadram Institute in Norwich	UNITED KINGDOM
One Health Genomic and Metagenomic Approaches to Campylobacter and Food Safety	ongoing	Study the role of plasmids in the evolution of Campylobacter spp. and emergence of AMR	Massey University	NEW ZEALAND
Improvement of C. infans culturing and isolation methods	ongoing	Study the optimal growth conditions of C. infans	Quadram Institute in Norwich	UNITED KINGDOM
Investigation of the Surface layer of Campylobacter fetus isolates	ongoing	Study the composition and genomic infrastructure of the Surface-layer of Campylobacter fetus	The London School of Hygiene & Tropical Medicine	UNITED KINGDOM
Antimicrobial Resistance of Campylobacter fetus	ongoing	Study the antimicrobial resistances of Campylobacter fetus to determine ECOFFs	The European Committee on Antimicrobial Susceptibility Testing	SWEDEN
Isolation and susceptibility testing of Campylobacter in livestock	2022-2023	Prevalence of Campylobacter and susceptibility testing	Veterinary Institute	LAOS
Harmonization of methods to detect Campylobacter	ongoing	Providing input for the Guideline on susceptibility testing of food borne pathogens	Chulalongkorn University	THAILAND

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

No

TOR6: EPIZOOLOGICAL DATA

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

No

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:

1

van der Graaf-van Bloois, L., Duim, B., Looft, T., Veldman, K. T., Zomer, A. L., & Wagenaar, J. A. (2023). Antimicrobial resistance in Campylobacter fetus: emergence and genomic evolution. *Microbial genomics*, 9(3), Article 000934. <https://doi.org/10.1099/mgen.0.000934>

b) International conferences:

3

5th International Conference of the European College of Veterinary Microbiology (ECVM), 21-23 sept 2023, Bled (Slovenië).

FAO-Regional meeting on antimicrobial resistance, Bangkok, Thailand, 28-30 November 2023.

Chair of the FAO-WHO meeting on 'measures for the control of Campylobacter spp in chicken meat. Rome 6-10 February 2023.

c) National conferences:

1

Scientific Spring Meeting of the Dutch Society for Microbiology, 4-5 April 2023, Papendal, the Netherlands

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

1

Wagenaar, J., Newell, D. G., Kalupahana, R. S., & Mughini Gras, L. (2023). Campylobacter: Animal Reservoirs, Human Infections, and Options for Control. In A. Sing (Ed.), Zoonoses: Infections Affecting Humans and Animals (2 ed.). Springer. https://doi.org/10.1007/978-3-030-85877-3_6-1.

https://dspace.library.uu.nl/bitstream/handle/1874/433298/978-3-030-85877-3_6-1.pdf?sequence=1

TOR7: SCIENTIFIC AND TECHNICAL TRAINING

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

Yes

a) Technical visit : 3

b) Seminars : 1

c) Hands-on training courses: 2

d) Internships (>1 month) 2

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
A	INDONESIA	20
A	UNITED KINGDOM	7
B	INDONESIA	50
C	INDONESIA	10
A	INDONESIA	6
D	INDONESIA	1
D	SPAIN	1

TOR8: QUALITY ASSURANCE

18. Does your laboratory have a Quality Management System?

Yes

Quality management system adopted	Certificate scan (PDF, JPG, PNG format)	
ISO 9001:2015	management system	ISO-9001-197379-2016-AQ-NLD-RvA-1-en-US-20210820-20210820101019 (002).pdf
ISO/IEC 17025:2017	certificate	L389 Verklaring EN (002).pdf
ISO/IEC 17025:2017	overview assays	L389-annex.pdf

19. Is your quality management system accredited?

Yes

Test for which your laboratory is accredited	Accreditation body

ISO/IEC 17025:2017 MIC assays for Campylobacter	The Dutch accreditation Council RvA
ISO/IEC 17025:2017 Isolation and detection of Campylobacter; cutoff, Preston, Bolton, mCCDA, Maldi-Tof	The Dutch accreditation Council RvA

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

Yes

- All our laboratories have a biosafety level 2 status (BSL-2), and work procedures are all written in Standard Operating Procedures following BSL-2 requirements - The faculty of Veterinary Medicine of Utrecht University and Wageningen Bioveterinary Research have a biosafety department. The biosafety officers support, assist and control biosafety issues of our the labs including the BSL-2 status, licenses, protocols and audits.

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?

Not applicable (only WOAHP Reference Laboratory designated for the disease)

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

Not applicable (Only WOAHP Reference Laboratory designated for the disease)

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

Not applicable (Only WOAHP Reference Laboratory designated for the disease)

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?

Not applicable (Only WOAHP Reference Laboratory designated for the disease)

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?

Yes

Purpose for inter-laboratory test comparisons ¹	Role of your reference laboratory (organizer/participant)	No. participating laboratories	Name of the Test	WOAHP Member Countries
performance for isolation	WBVR: organizer UU: participant	3	Isolation of Campylobacter fetus	THE NETHERLANDS,

TOR12: EXPERT CONSULTANTS

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

Yes

KIND OF CONSULTANCY	Location	SUBJECT (FACULTATIVE)
updating Chapter on campylobacteriosis	local	updated chapter on C. jejuni/coli

29. Additional comments regarding your report:

Yes

To meet the needs of the member countries we are developing a new diagnostic PCR-based assay to discriminate C. fetus subspecies.

We are currently working on a webtool that can be used by member countries to upload whole genome sequences to identify the subspecies of C. fetus. We expect to have this tool available in 2024.