WOAH Reference Laboratory Reports Activities 2022

Activities in 2022

This report has been submitted : 9 mars 2023 16:34

Laboratory Information

Name of disease (or topic) for which you are a designated WOAH Reference Laboratory:	Salmonellosis
Address of laboratory:	Diedersdorfer Weg 1, 12277 Berlin, Ger,many
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E-mail address:	istvan.szabo@bfr.bund.de
Website:	www.bfr.bund.de
Name (including Title) of Head of Laboratory (Responsible Official):	Dr. Istvan Szabo
Name (including Title and Position) of WOAH Reference Expert:	Dr. Istvan Szabo
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	
Indirect diagnostic tests		Nationally	Internationally
Serotyping of Salmonella		3130	
PCR (S. Paratyphi B, d-Tartrat)		49	
Real-time PCR (Salmonella spp)		186	
Test Salmonella Enteritidis Vaccine Strains		51	

S. Typhimurium, monophasic (conformation PCR)		350	
Next Generation Sequencing of Salmonella		1451	
Antimicrobial susceptibility test (MIC) of Salmonella strains		1159	
Direct diagnostic tests		Nationally	Internationally

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?

No

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

No

TOR4: DIAGNOSTIC TESTING FACILITIES

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

No

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

No

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		PURPOSE OF THE STUDY	PARTNERS	WOAH MEMBER COUNTRIES INVOLVED

	Duration		(INSTITUTIONS)	OTHER THAN YOUR COUNTRY
FARMED – Fast Antimicrobial Resistance and Mobile-Element Detection using meta-genomics for animal and human on-site tests (One Health European Joint Programme) since January 2020	5 years	Fast Antimicrobial Resistance and Mobile-Element Detection using meta-genomics for animal and human on-site tests	5 years 1. Animal and Pant Health Agency (UK) 2. Technical University of Denmark 3. Istituto Superiore di Sanità (ISS) (IT) 4. Sciensano (Belgium) 5. Statens Serum Institut (DK) 6. Complutense University of Madrid (ES) 7. Wageningen Bioveterinary Research (NL) 8. Istituto Zooprofilattico Sperimentale dell'Abruzzo e del Molise "G. Caporale" (IT) BELGIUM DENMARK ITALY SPAIN THE NETHERLANDS UNITED KINGDOM	BELGIUM DENMARK ITALY SPAIN THE NETHERLANDS UNITED KINGDOM

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:
Data is collected in frame of the following programs: - national (General Administrative Provision, AVV) and European Salmonella monitoring programs - national control programs for Salmonella (Directive 2003/99/EC and Regulation (EC) No 2160/2003) in breeding flocks of Gallus gallus (Commission Regulation (EU) No 200/2010), in laying hens of Gallus gallus (Commission regulation (EU) No 517/2011), in flocks of broilers (Commission regulation (EU) No 200/2012) and in flocks of turkeys (Commission regulation (EU) No 1190/2012) The collected data is an important part of the national and international human outbreak investigations. It is also the base for the investigation of different epidemiological issues on the level of primary production.

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:
Salmonella Data is part of the national zoonoses report "Pathogens of zoonoses in Germany" on the epidemiological situation in the food chain, which appears as a BfR science booklet and is available for download. The data used to compile this national zoonoses report are also used for reporting zoonoses to the European Food Safety Authority (EFSA).

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:

5

Frentzel, H., Y. Kelner-Burgos, J. Fischer, J. Heise, A. Göhler and H. Wichmann-Schauer (2022). "Occurrence of selected bacterial pathogens in insect-based food products and in-depth characterisation of detected Bacillus cereus group isolates." International Journal of Food Microbiology 379: 109860.

Luiken, R. E., D. J. Heederik, P. Scherpenisse, L. Van Gompel, E. van Heijnsbergen, G. D. Greve, B. G. Jongerius-Gortemaker, M. H. Tersteeg-Zijderveld, J. Fischer, K. Juraschek, M. Skarzynska, M. Zajac, D. Wasyl, E. group, J. A. Wagenaar, L. A. Smit, I. M. Wouters, D. J. Mevius and H. Schmitt (2022). "Determinants for antimicrobial resistance genes in farm dust on 333 poultry and pig farms in nine European countries." Environ Res 208: 112715.

Perestrelo, S., G. Correia Carreira, L. Valentin, J. Fischer, Y. Pfeifer, G. Werner, J. Schmiedel, L. Falgenhauer, C. Imirzalioglu, T. Chakraborty and A. Kasbohrer (2022). "Comparison of approaches for source attribution of ESBL-producing Escherichia coli in Germany." PLoS One 17(7): e0271317.

Schlund, O., A. Göhler, M. Borowiak, C. Deneke, M. Fischer and M. C. Lamparter (2022). "Complete Genome Sequence of a Salmonella enterica subsp. enterica Serovar Tennessee Strain from Tahini." Microbiol Resour Announc e0040722.

Yang, D., D. J. J. Heederik, P. Scherpenisse, L. Van Gompel, R. E. C. Luiken, K. Wadepohl, M. Skarzynska, E. Van Heijnsbergen, I. M. Wouters, G. D. Greve, B. G. M. Jongerius-Gortemaker, M. Tersteeg-Zijderveld, L. Portengen, K. Juraschek, J. Fischer, M. Zajac, D. Wasyl, J. A. Wagenaar, D. J. Mevius, L. A. M. Smit and H. Schmitt (2022). "Antimicrobial resistance genes aph(3')-III, erm(B), sul2 and tet(W) abundance in animal faeces, meat, production environments and human faeces in Europe." Journal of Antimicrobial Chemotherapy 77(7): 1883–1893.

b) International conferences:

12

Burkhardt W, Deneke C, Uelze L, Borowiak M, Fischer J, Dangel A, Hepner S, Sing A, Egelkamp R, Wolf S, Methner U, Linde J, Nurjadi D, Bletz S and M. B (2022). Accuracy and reproducibility of whole genome short-read sequencing applied for surveillance of Salmonella in Germany9. International Symposium Salmonella and Salmonellosis. Staint Malo, France, ANSES.

Fischer, J., A. Bloch, E. Junker, G. Raatz, M. Grobbell, I. A., M. Borowiak, C. Deneke and I. Szabo (2022). Carbapenemase-producing Salmonella from non-human sources in Germany: An update. International Symposium Salmonella and Salmonellosis. Saint Malo, France, ANSES.

Fischer, J., A. Bloch, E. Junker, G. Raatz, M. Grobbell, I. A., C. Deneke and I. Szabo (2022). Carbapenemase-producing Salmonella from non-human sources in Germany: An update. 32nd European Congress of Clinical Microbiology & Infectious Diseases. Lisbon, Portugal, ESCMID.

Gruetzke, J., J.-H. Hammerl, J. Fischer, J. Bartsch, B. Malorny and C. Deneke (2022). Application of proximity ligation to link antibiotic resistance genes and species using metagenomics. 32nd European Congress of Clinical Microbiology & Infectious Diseases. Lisbon, Portugal, ESCMID.

Grützke, J., J.-A. Hammerl, J. Fischer, L. J. Bartsch, B. Malorny and C. Deneke (2022). Is Hi-C feasible to link antibiotic resistance genes and species in mixed bacterial communities? . FoodMicro 2022. online und Athen.

Hadziabdic, S., S. Opherden, S. Fleischmann, T. Alter, C. Robé, R. Uwe, A. Gensch, P. Rotsch, G. Wiese and I. Szabo (2022). Salmonella decontamination of table eggs using UV-C and UV-C-LED technology. International Symposium Salmonella and Salmonellosis. Staint

Malo, France, ANSES: -.

Kipcoech C., Gottschalk C., Jaster-Keller J., H. Frentzel, T. Lienen, F. J, A. Irrgang, W. J and G. André (2022). Determination of microbiological safety of farmed and wild harvested edible insects from Kenya and surrounding countries. Tropentag 2022. Czech University of Life Sciences, Prague.

Pietsch, M., Deneke, Carlus, Uelze, Laura, Simon, Sandra, Fischer, Jennie, Szabo, Istvan, Burkhardt, Wiebke, Borowiak, Maria, Dangel, Alexandra, Hepner, Sabrina, Sing, Andreas, Busch, Ulrich, Huber, Ingrid, Bretschneider, Nancy, Lamparter, Marina, Tausch, Simon, Becker, Natalie, Linde, Jörg, Methner, Ulrich, Malorny, Burkhard, Flieger, Antje (2022). GenoSalmSurv – An Integrated Genome-based surveillance system for Salmonella 13th International Meeting on Microbial Epidemiological Markers (IMMEM XIII) Bath, UK, ESCMID.

Russo, I., J. Fischer, A. Groger, A. Irrgang, G. F. Schiavano, F. Andreoni, M. Napoleoni, G. Brandi and G. Amagliani (2022). From farm to fork: la diffusione di un clone di Salmonella Infantis pESI-like blaCTX-M-1 multiresistente nella regione Marche. 55° Congresso Nazinale, Società Italiana di Ihiene. Padova, Italy.

Schlund, O. G., André ; Fischer, Matthias ; Lamparter, Marina C. (2022). Tahini: A Vehicle for Salmonella in Germany. International Symposium Salmonella and Salmonellosis. Staint Malo, France, ANSES.

Staat, D., S. Simon, M. C. Lamparter, J. Fischer, T. Schewe, B. Rosner, T. Wagner, K. Siling, J. Overhoff, A. Flieger, K. Stark, S. Gillesberg Lassen and A. Meinen (2022). Large outbreak of Salmonella Muenchen linked to dried coconut pieces, 9/2020 to 7/2021, Germany: An effective interaction between epidemiology and microbiology. International Symposium Zoonose Reasearch. Berlin, Zoonose Netzwerk.

Staat, D. S., Sandra; Lamparter, Marina; Schewe, Thomas; Rosner, Bettina; Meinen, Anika; Wagner, Tobias; Siling, Katja; Overhoff, Judith; Flieger, Antje; Stark, Klaus; Gillesberg, Lassen Sofie (2022). Large outbreak of Salmonella Muenchen linked to coconut pieces, September 2020 to April 2021, Germany: An effective interaction between epidemiology and microbiology. International Symposium Salmonella and Salmonellosis. Staint Malo, France, ANSES.

c) National conferences:

3
Fischer, J., A. Bloch, E. Junker, G. Raatz, M. Grobbell, I. A., M. Borowiak, C. Deneke and I. Szabo (2022). Carbapenemase-producing Salmonella from non-human sources in Germany: An update. 40. Jahrestagung der DVG-Fachgruppe "AVID" 2022. Kloster Banz und online, Deutsche Veterinärmedizinische Gesellschaft.

Schlund, O., A. Göhler, M. Fischer and M. C. Lamparter (2022). Enterobacteriaceae in Tahini: Occurrence andSurvival of Salmonella spp. and E. coli. Verteidigung Bachelorarbeit. Berlin, Germany (Online).

Szabo, I. (2022). Salmonellen in Nutztieren, Lebens- und Futtermitteln in Deutschland: Bericht aus dem NRL für Salmonella. 4. LGL-Kongress Lebensmittelsicherheit und Tiergesundheit. Erlangen.

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

TOR7: SCIENTIFIC AND TECHNICAL TRAINING

17. Did your laboratory provide scientific and technical training to laboratory personnel from other WOAH 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		Urkunde_vorab_download_U_F_PL_18583_02_00_2021_E1__09112022.pdf

19. Is your quality management system accredited?

Yes

Test for which your laboratory is accredited	Accreditation body
Serotyping of Salmonella spp.	German National Accreditation Body
Detection of Salmonella spp. (ISO 6579-1)	German National Accreditation Body
Detection of Salmonella spp. with PCR and real-time PCR	German National Accreditation Body
Identification of Salmonella Enteritidis with real-time PCR	German National Accreditation Body
Conformation of d-Tartrat fermentation in Salmonella spp. with PCR German National Accreditation Body	German National Accreditation Body
Identification of S. Enteritidis Vaccine Strains with real-time PCR	German National Accreditation Body
Identification of mono- and bipasich S. Typhimurium with real-time PCR	German National Accreditation Body

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

Yes

In accordance with § 6 German Ordinance on Hazardous Substances (GefStoffV) a risk assessment for the Hazardous Substances used in laboratory (including pathogens) has to be carried out and measures/countermeasures against biodocumented risk needs to be identified. Furthermore, the laboratory rooms in laboratory area are approved as L2 or S2 laboratories by the competent authotity, that requires biorisk measures.

TOR9: SCIENTIFIC MEETINGS

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

No

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

No

TOR10: NETWORK WITH WOAH REFERENCE LABORATORIES

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

Yes

24. Are you a member of a network of WOAH Reference Laboratories designated for the same pathogen?

No

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

pathogen?

No

26. Did your laboratory collaborate with other WOAH 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 WOAH Reference Laboratories for the same pathogen?

Yes

Purpose for inter-laboratory test comparisons1	Role of your reference laboratory (organizer/participant)	No. participating laboratories	Region(s) of participating WOAH Member Countries
EURL-Salmonella ring trial : Salmonella detection in food	participant	34	Europe
EURL-Salmonella ring trial : Salmonella detection in primary production	participant	34	Europe
EURL ring trial : Salmonella serotyping	participant		Europe
EURL ring trial : Salmonella Whole Genome Sequencing and cluster analysis of Salmonella strains	participant		Europe

TOR12: EXPERT CONSULTANTS

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

Yes

KIND OF CONSULTANCY	Location	SUBJECT (FACULTATIVE)
Query regarding the Terrestrial Manual	Via Email between WOAH Referencelaboratories for Salmonella	Terrestrial manual Salmonella RSA testing

29. Additional comments regarding your report: