Istvan Szabo - Salmonellosis - GERMANY

WOAH Reference Laboratory Reports Activities 2023
Activities in 2023
This report has been submitted: 7 juin 2024 10:07

**Laboratory Information**

<table>
<thead>
<tr>
<th>Name of disease (or topic) for which you are a designated WOAH Reference Laboratory:</th>
<th>Salmonellosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Address of laboratory:</td>
<td>Diedersdorfer Weg 1, 12277 Berlin, Germany</td>
</tr>
<tr>
<td>Tel:</td>
<td>+49-30 184 12 24221</td>
</tr>
<tr>
<td>E-mail address:</td>
<td><a href="mailto:istvan.szabo@bfr.bund.de">istvan.szabo@bfr.bund.de</a></td>
</tr>
<tr>
<td>Website:</td>
<td><a href="http://www.bfr.bund.de">www.bfr.bund.de</a></td>
</tr>
<tr>
<td>Name (including Title) of Head of Laboratory (Responsible Official):</td>
<td>Dr. Istvan Szabo</td>
</tr>
<tr>
<td>Name (including Title and Position) of WOAH Reference Expert:</td>
<td>Dr. Istvan Szabo</td>
</tr>
</tbody>
</table>

**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

<table>
<thead>
<tr>
<th>Diagnostic Test</th>
<th>Indicated in WOAH Manual (Yes/No)</th>
<th>Total number of test performed last year</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Nationally</td>
<td>Internationally</td>
</tr>
<tr>
<td>Indirect diagnostic tests</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Serotyping of Salmonella isolates</td>
<td>3278</td>
<td>0</td>
</tr>
<tr>
<td>Test Salmonella Enteritidis Vaccine Strains</td>
<td>38</td>
<td>0</td>
</tr>
<tr>
<td>S. Typhimurium, monophasic (conformation PCR)</td>
<td>343</td>
<td>0</td>
</tr>
<tr>
<td>Next Generation Sequencing of Salmonella</td>
<td>1452</td>
<td>0</td>
</tr>
<tr>
<td>Antimicrobial susceptibility test (MIC) of Salmonella strains</td>
<td>847</td>
<td>0</td>
</tr>
<tr>
<td>PCR (conformation of d-Tartrat+S. Paratyphi B)</td>
<td>34</td>
<td>0</td>
</tr>
<tr>
<td>Real-time PCR (conformation of Salmonella spp)</td>
<td>232</td>
<td>0</td>
</tr>
<tr>
<td>Direct diagnostic tests</td>
<td>Nationally</td>
<td>Internationally</td>
</tr>
</tbody>
</table>

**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?

   Yes

<table>
<thead>
<tr>
<th>TYPE OF REAGENT</th>
<th>RELATED DIAGNOSTIC</th>
<th>AMOUNT SUPPLIED</th>
<th>AMOUNT SUPPLIED</th>
<th>NO. OF RECIPIENT</th>
<th>COUNTRY OF</th>
</tr>
</thead>
</table>

WOAH Reference Laboratory Reports Activities 2023
4. Did your laboratory produce vaccines?  
No

5. Did your laboratory supply vaccines to WOAH 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 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?  
Yes

<table>
<thead>
<tr>
<th>NAME OF WOAH MEMBER COUNTRY SEEKING ASSISTANCE</th>
<th>DATE</th>
<th>WHICH DIAGNOSTIC TEST USED</th>
<th>NO. SAMPLES RECEIVED FOR PROVISION OF DIAGNOSTIC SUPPORT</th>
<th>NO. SAMPLES RECEIVED FOR PROVISION OF CONFIRMATORY DIAGNOSES</th>
</tr>
</thead>
<tbody>
<tr>
<td>UGANDA</td>
<td>2024-04-24</td>
<td>Salmonella Serotyping</td>
<td>397</td>
<td>0</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Title of the study</th>
<th>Duration</th>
<th>PURPOSE OF THE STUDY</th>
<th>PARTNERS (INSTITUTIONS)</th>
<th>WOAH MEMBER COUNTRIES INVOLVED OTHER THAN YOUR COUNTRY</th>
</tr>
</thead>
</table>

From farm to fork: epidemiological study, genetic
characterization and plasmid identification of antibiotic resistant Salmonella strains isolated along the food chain in Marche Region

Istvan Szabo - Salmonellosis - GERMANY

2 years

Analysis of antibiotic resistance determinants in Salmonella

University of Urbino, Italy

Department of Biomolecular Sciences

ITALY

Training in the use of bioinformatic platforms in the framework of foodborne disease control

2 year

Investigations of the occurrence of extended spectrum beta-lactamases in Salmonella of non-human origin and their association with mobile genetic elements

University of the Basque Country (UPV/EHU)

SPAIN

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

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:

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:

8


b) International conferences:

2
Lamparter, M. C., A Salmonella cgMLST validation study for accreditation in Germany. In 27th EURL-Salmonella workshop, Bilthoven (Online), 2023.7.

Szabo, I., NRL for Salmonella Germany. In EURL Salmonella Workshop 2023, - Bilthoven (Online), 2023.

c) National conferences:

8


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

<table>
<thead>
<tr>
<th>Quality management system adopted</th>
<th>Certificate scan (PDF, JPG, PNG format)</th>
<th>AkkreditierungsurkundeD-PL-18583-02-00.pdf</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISO 17025</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

19. Is your quality management system accredited?

Yes
### Test for which your laboratory is accredited

<table>
<thead>
<tr>
<th>Test Description</th>
<th>Accreditation body</th>
</tr>
</thead>
<tbody>
<tr>
<td>Serotyping of Salmonella spp.</td>
<td>German National Accreditation Body</td>
</tr>
<tr>
<td>Detection of Salmonella spp. (ISO 6579-1)</td>
<td>German National Accreditation Body</td>
</tr>
<tr>
<td>Detection of Salmonella spp. with PCR and real-time PCR</td>
<td>German National Accreditation Body</td>
</tr>
<tr>
<td>Identification of Salmonella Enteritidis with real-time PCR</td>
<td>German National Accreditation Body</td>
</tr>
<tr>
<td>Conformation of d-Tartrat fermentation in Salmonella spp. with PCR</td>
<td>German National Accreditation Body</td>
</tr>
<tr>
<td>Identification of S. Enteritidis Vaccine Strains with real-time PCR</td>
<td>German National Accreditation Body</td>
</tr>
<tr>
<td>Identification of mono- and bipasich S. Typhimurium with realtime PCR</td>
<td>German National Accreditation Body</td>
</tr>
</tbody>
</table>

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 authority, 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. Do you network (collaborate or share information) with other 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

<table>
<thead>
<tr>
<th>Purpose for inter-laboratory test comparisons</th>
<th>Role of your reference laboratory (organizer/participant)</th>
<th>No. participating laboratories</th>
<th>Name of the Test</th>
<th>WOAH Member Countries</th>
</tr>
</thead>
<tbody>
<tr>
<td>EURL-Salmonella proficiency test: Salmonella detection in food and feed</td>
<td>participant</td>
<td>51</td>
<td>Detection of Salmonella spp. ISO 6579-1</td>
<td></td>
</tr>
<tr>
<td>EURL-Salmonella proficiency test: Salmonella detection in primary production</td>
<td>participant</td>
<td>37</td>
<td>Detection of Salmonella spp. ISO 6579-1</td>
<td></td>
</tr>
<tr>
<td>EURL proficiency test: Salmonella serotyping</td>
<td>participant</td>
<td>32</td>
<td>Salmonella Serotyping</td>
<td></td>
</tr>
<tr>
<td>EURL proficiency test: Salmonella Whole Genome Sequencing and cluster analysis of Salmonella strains</td>
<td>participant</td>
<td>20</td>
<td>Whole Genome Sequencing</td>
<td></td>
</tr>
</tbody>
</table>

### TOR12: EXPERT CONSULTANTS
28. Did your laboratory place expert consultants at the disposal of WOAH?

No

29. Additional comments regarding your report:

Yes

1. The main task of our laboratory is the identification and analysis of Salmonella isolates originating from feed, food, environment, wild life and primary production, using serological and molecular biological methods. The primary analysis of clinical material (serum, blood, urine) is not the focus of our laboratory. The analytical work starts with Salmonella isolates, isolated and provided by different laboratories in Germany. For conducting investigations of outbreaks and epidemiological studies, a variety molecular biological methods have been established. Within the frame of his work, the National Reference Laboratory for Salmonella in Germany can provide scientific and technical advice on disease control measures to WOAH Member Countries. However such request are rather seldom.

2. The participants of the reported proficiency tests organized by the European Union Reference Laboratory (EURL) are mainly : the obligatory 27 National Reference Laboratories for Salmonella in the 27 EU Member States, and other European (potential) candidate countries, as well as the European Free Trade Association (EFTA) countries and the UK. Out of these Germany, Italy and United Kingdom are WOAH reference laboratories for Salmonellosis.