## Laboratory Information

| Name of disease (or topic) for which you are a designated WOAH Reference Laboratory: | American foulbrood |
| Address of laboratory: | |
| Tel: | +33 (0)4 92 94 37 00 |
| E-mail address: | marie-pierre.chauzat@anses.fr |
| Website: | |

### WOAH Reference Expert:

**Dr Marie-Pierre CHAUZAT** (WOAH expert for Nosemosis, American foulbrood; European foulbrood, varroosis and nosemosis; Head the European laboratory for honeybee health)

### Which of the following defines your laboratory?
- Check all that apply:
  - Research agency

## 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**
       - none
       - Nationally: 0
       - Internationally: 0
     - **Direct diagnostic tests**
       - Recherche de la loque américaine par examen bactérioscopique
       - Nationally: 7
       - Internationally: 0
       - Isolement et culture de Paenibacillus larvae (agent de la loque américaine)
       - Nationally: 0
       - Internationally: 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?
   - Yes

### TYPE OF REAGENT AVAILABLE

<table>
<thead>
<tr>
<th>RELATED DIAGNOSTIC TEST</th>
<th>PRODUCED/PROVIDE</th>
<th>AMOUNT SUPPLIED NATIONALY (ML, MG)</th>
<th>AMOUNT SUPPLIED INTERNATIONALLY (ML, MG)</th>
<th>NO. OF RECIPIENT WOAH MEMBER COUNTRIES</th>
<th>COUNTRY OF RECIPIENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contrôle positif</td>
<td>Culture bactérienne</td>
<td>Souche de référence P. larvae</td>
<td>0.1 ml</td>
<td>2 x 0.1 ml</td>
<td>2</td>
</tr>
</tbody>
</table>

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?  
No
11. Did your laboratory provide expert advice in technical consultancies on the request of a WOAH Member?  
Yes

<table>
<thead>
<tr>
<th>NAME OF THE WOAH MEMBER COUNTRY RECEIVING A TECHNICAL CONSULTANCY</th>
<th>PURPOSE</th>
<th>HOW THE ADVICE WAS PROVIDED</th>
</tr>
</thead>
<tbody>
<tr>
<td>BRAZIL</td>
<td>Implémentation de tests diagnostiques par PCR temps réel</td>
<td>Conseils à distance par voie de courriers électroniques : 1/ Discussions sur la méthode 2/ Corrections de runs de PCR sur photos</td>
</tr>
<tr>
<td>SPAIN</td>
<td>Amélioration de la caractérisation de souches de P. larvae : Implémentation de la méthode de typage par MLVA</td>
<td>Conseils à distance par voie de courrier électroniques : 1/ Discussions sur la méthode. 2/ Organisation d'un essai MLVA bilatéral 3/ Envoi de matériel de référence pour le typage 4/ Corrections de runs de PCR sur photos</td>
</tr>
<tr>
<td>THE NETHERLANDS</td>
<td>Demande d'informations sur la réglementation concernant la loque américaine en France et la gestion de cas positifs</td>
<td>Conseils à distance par voie de courrier électroniques</td>
</tr>
</tbody>
</table>

**TOR5: COLLABORATIVE SCIENTIFIC AND TECHNICAL STUDIES**

12. Did your laboratory participate in international scientific studies in collaboration with WOAH Members other than the own?  
No
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?  
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:
b) International conferences:

c) National conferences:

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

Le laboratoire diffuse, selon le besoin et/ou la situation, des informations sur la loque américaine sur les sites Internet :
- Page web du laboratoire de Sophia Antipolis : https://www.anses.fr/fr/portails/1807/content/150751

**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>
</tr>
</thead>
<tbody>
<tr>
<td>ISO 17025</td>
<td>pdf</td>
</tr>
</tbody>
</table>

19. Is your quality management system accredited?

Yes

<table>
<thead>
<tr>
<th>Test for which your laboratory is accredited</th>
<th>Accreditation body</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recherche de la loque américaine par examen bactérioscopique</td>
<td>cofrac</td>
</tr>
<tr>
<td>Identification de Paenibacillus larvae agent de la loque américaine par PCR conventionnelle</td>
<td>cofrac</td>
</tr>
<tr>
<td>Identification de Paenibacillus larvae agent de la loque américaine par PCR temps réel</td>
<td>cofrac</td>
</tr>
</tbody>
</table>

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

Yes

Au sein du laboratoire, différentes mesures de biosécurité et de biosûreté sont mises en place pour gérer le risque biologique de façon générale (gestion des déchets, nettoyage/désinfection, contrôle des accès aux locaux et au système informatique, procédures techniques pour la réception des échantillons et les analyses, formation et habilitation des personnels...). En outre, des locaux distincts sont affectés aux essais immunosérologiques, à la biologie moléculaire, aux manipulations en microbiologie et à la culture des cellules saines ainsi qu’aux contaminants chimiques. Toutes ces procédures/mesures sont inscrites dans le système de management de la qualité du laboratoire.

**TOR9: SCIENTIFIC MEETINGS**

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

Yes

<table>
<thead>
<tr>
<th>NATIONAL/INTERNATIONAL</th>
<th>TITLE OF EVENT</th>
<th>CO-ORGANISER</th>
<th>DATE (MM/YY)</th>
<th>LOCATION</th>
<th>NO. PARTICIPANTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>International</td>
<td>Les diagnostics et les travaux sur la loque américaine</td>
<td>none</td>
<td>2023-12-14</td>
<td>Teams</td>
<td>3</td>
</tr>
</tbody>
</table>
22. Did your laboratory participate in scientific meetings related to the pathogen in question on behalf of WOAH?
Yes

<table>
<thead>
<tr>
<th>Title of event</th>
<th>Date (mm/yy)</th>
<th>Location</th>
<th>Role (speaker, presenting poster, short communications)</th>
<th>Title of the work presented</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vaccin contre la loque américaine</td>
<td>2023-10-23</td>
<td>Teams</td>
<td>Echanges scientifiques</td>
<td>Présentation de la société Dalan</td>
</tr>
<tr>
<td>Discussion avec Nigel Swift</td>
<td>2023-11-17</td>
<td>Sophia</td>
<td>Echanges scientifiques</td>
<td>Vaccin contre la loque américaine</td>
</tr>
<tr>
<td>Meeting with Dalan Animal Health</td>
<td>2023-12-08</td>
<td>Zoom</td>
<td>Echanges scientifiques</td>
<td>Bee Vaccine for AFB organised by F. Diaz</td>
</tr>
</tbody>
</table>

**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?
Yes

<table>
<thead>
<tr>
<th>NETWORK/DISEASE</th>
<th>ROLE OF YOUR LABORATORY (PARTICIPANT, ORGANISER, ETC)</th>
<th>NO. PARTICIPANTS</th>
<th>PARTICIPATING WOAH REF. LABS</th>
</tr>
</thead>
<tbody>
<tr>
<td>AFB</td>
<td>participant</td>
<td>3</td>
<td>discussions</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>PURPOSE OF THE PROFICIENCY TESTS</th>
<th>ROLE OF YOUR REFERENCE LABORATORY (ORGANISER/ PARTICIPANT)</th>
<th>NO. PARTICIPANTS</th>
<th>PARTICIPATING WOAH REF. LABS/ ORGANISING WOAH REF. LAB.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Detection of Paenibacillus larvae / Melissococcus plutonius, agents of American / European foulbrood, in crushed bee larvae by: Microscopy, PCR, Culture</td>
<td>Organisateur</td>
<td>1</td>
<td>Organisateur OMSA</td>
</tr>
</tbody>
</table>

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>Bilateral assay on the detection of Paenibacillus larvae, agent of American foulbrood, in crushed bee larvae by PCR</td>
<td>Organisateur</td>
<td>1</td>
<td>Bilateral assay on the detection of Paenibacillus larvae, agent of American foulbrood, in crushed bee larvae by PCR</td>
<td></td>
</tr>
<tr>
<td>Bilateral assay on the detection of Paenibacillus larvae, agent of American foulbrood, in crushed bee larvae by PCR</td>
<td>Bilateral assay on the detection of Paenibacillus larvae, agent of American foulbrood, in crushed bee larvae by PCR</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
of Paenibacillus larvae / Melissococcus plutonius, agents of American / European foulbrood, in crushed bee larvae by Microscopy

Organisateur 1

TURKEY,

Bilateral assay on the MLVA genotyping of Paenibacillus larvae, agent of American foulbrood

Organisateur 1

SPAIN,

TOR12: EXPERT CONSULTANTS

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

No

29. Additional comments regarding your report:

Yes

The Anses Sophia Antipolis laboratory has been working for several years on the development and validation of quality diagnostic methods for the detection and/or identification of American and European foulbrood agents. Most of the methods used by Anses Sophia Antipolis derive from those described in the Manual of diagnostic tests and vaccines for terrestrial animals. WHOA Member States have easy access to the Manual and often demonstrate that they are autonomous in their uses. In addition, for both diseases, the clinical characteristics and diagnostic approaches are well-documented; or even quite well known; and the diagnostic methods are easy to implement. As a result, the Anses Sophia Antipolis laboratory remains very little requested in terms of diagnostics at the international level.

Most often, the questions we receive concern details of the implementation of methods but mainly relate to the supply of reference materials (MRs), organization of proficiency tests (PTs) and sometimes provision of training. The latter topics are subject to a number of administrative and budgetary constraints. Indeed, apart from sending DNAs, sending MRs for microscopy and/or culture diagnosis; or for the participation in PTs require obtaining pathogen import permits and shipping under UN3373 conditions. These formalities are time consuming and most of the time the cost can be prohibitive, including for certain European countries. Concerning training requests, the question of financing those remains relevant.

Consequently, the interactions that Anses Sophia Antipolis may have with the requesting laboratories are found to be limited only to exchanges and/or discussions on the pathogens or the methods used by email or Visio call.