

# OIE Reference Laboratory Reports Activities

## *Activities in 2017*

**This report has been submitted : 2018-01-12 12:38:35**

<b>Name of disease (or topic) for which you are a designated OIE Reference Laboratory:</b>	Swine influenza
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<b>Name (including Title) of Head of Laboratory (Responsible Official):</b>	Prof. Stefano Cinotti
<b>Name (including Title and Position) of OIE Reference Expert:</b>	Emanuela Foni
<b>Which of the following defines your laboratory? Check all that apply:</b>	Governmental

**ToR 1: To use, promote and disseminate diagnostic methods validated according to OIE Standards**

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 OIE Manual (Yes/No)	Total number of test performed last year	
		Nationally	Internationally
Indirect diagnostic tests		Nationally	Internationally
Haemoagglutination inhibition test	yes	49882	1733
Direct diagnostic tests		Nationally	Internationally
Real-time PCR M gene	yes	2111	3
eggs isolation	yes	189	0
Cell culture isolation	yes	340	0
PCR for IAV-S typing	yes	212	3
sequencing isolates	no	67	0

**ToR 2: To develop reference material in accordance with OIE requirements, and implement and promote the application of OIE Standards. To store and distribute to national laboratories biological reference products and any other reagents used in the diagnosis and control of the designated pathogens or disease.**

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

No

3. Did your laboratory supply standard reference reagents (non OIE-approved) and/or other diagnostic reagents to OIE Member Countries?

Yes

Type of reagent available	Related diagnostic test	Produced/ provide	Amount supplied nationally (ml, mg)	Amount supplied internationally (ml, mg)	No. of recipient OIE Member Countries	Region of recipients
Hyperimmune serum:H1N1 A/sw/It/311368/2013	Haemagglutination inhibition	produced	4,5ml	0	1	<input type="checkbox"/> Africa <input type="checkbox"/> Americ as <input type="checkbox"/> Asia and Pacific <input checked="" type="checkbox"/> Europe <input type="checkbox"/> Middle East
Hyperimmune serum H3N2: A/sw/It/311349/2013	Haemagglutination inhibition	produced	4,5ml	0	1	<input type="checkbox"/> Africa <input type="checkbox"/> Americ as <input type="checkbox"/> Asia and Pacific <input checked="" type="checkbox"/> Europe <input type="checkbox"/> Middle East
Hyperimmune serum H1N2 A/sw/It/284922/2009	Haemagglutination inhibition	produced	4,5ml	0	1	<input type="checkbox"/> Africa <input type="checkbox"/> Americ as <input type="checkbox"/> Asia and Pacific <input checked="" type="checkbox"/> Europe <input type="checkbox"/> Middle East
Virus H1N2 A/sw/It/284922/2009	Haemagglutination inhibition	produced	140 ml	0	1	<input type="checkbox"/> Africa <input type="checkbox"/> Americ as <input type="checkbox"/> Asia and Pacific <input checked="" type="checkbox"/> Europe <input type="checkbox"/> Middle East
Virus H1N1 A/sw/It/311368/2013	Haemagglutination inhibition	produced	100 ml	0	1	<input type="checkbox"/> Africa <input type="checkbox"/> Americ as <input type="checkbox"/> Asia and Pacific <input checked="" type="checkbox"/> Europe <input type="checkbox"/> Middle East
Virus H3N2: A/sw/It/311349/2013	Haemagglutination inhibition	produced	100ml	0	1	<input type="checkbox"/> Africa <input type="checkbox"/> Americ as <input type="checkbox"/> Asia and Pacific <input checked="" type="checkbox"/> Europe <input type="checkbox"/> Middle East

H1N1 A/sw/It/153822/2016	to BIOBANKING Veterinary Resources OIE Collaborative Centre	produced		10 ml	Available for any requesting OIE member country	<input type="checkbox"/> Africa <input type="checkbox"/> Americ as <input type="checkbox"/> Asia and Pacific <input type="checkbox"/> Europe <input type="checkbox"/> Middle East
H1N1pdm A/sw/It/13310/2016	to BIOBANKING Veterinary Resources OIE Collaborative Centre	produced		10 ml	Available for any requesting OIE member country	<input type="checkbox"/> Africa <input type="checkbox"/> Americ as <input type="checkbox"/> Asia and Pacific <input type="checkbox"/> Europe <input type="checkbox"/> Middle East
H1N2 A/sw/It/248854/2016	to BIOBANKING Veterinary Resources OIE Collaborative Centre	produced		10 ml	Available for any requesting OIE member country	<input type="checkbox"/> Africa <input type="checkbox"/> Americ as <input type="checkbox"/> Asia and Pacific <input type="checkbox"/> Europe <input type="checkbox"/> Middle East
H3N2 A/sw/It/33271/2016	to BIOBANKING Veterinary Resources OIE Collaborative Centre	produced		10 ml	Available for any requesting OIE member country	<input type="checkbox"/> Africa <input type="checkbox"/> Americ as <input type="checkbox"/> Asia and Pacific <input type="checkbox"/> Europe <input type="checkbox"/> Middle East
H1N2 A/sw/It/4675/2003	to BIOBANKING Veterinary Resources OIE Collaborative Centre	produced		10 ml	Available for any requesting OIE member country	<input type="checkbox"/> Africa <input type="checkbox"/> Americ as <input type="checkbox"/> Asia and Pacific <input type="checkbox"/> Europe <input type="checkbox"/> Middle East
H1N2 A/sw/It/259543-2/2003	to BIOBANKING Veterinary Resources OIE Collaborative Centre	produced		10 ml	Available for any requesting OIE member country	<input type="checkbox"/> Africa <input type="checkbox"/> Americ as <input type="checkbox"/> Asia and Pacific <input type="checkbox"/> Europe <input type="checkbox"/> Middle East

4. Did your laboratory produce vaccines?

No

5. Did your laboratory supply vaccines to OIE Member Countries?

No

***ToR 3: To develop, standardise and validate, according to OIE Standards, new procedures for diagnosis and control of the designated pathogens or diseases***

6. Did your laboratory develop new diagnostic methods validated according to OIE Standards for the designated pathogen or disease?

No

7. Did your laboratory develop new vaccines according to OIE Standards for the designated pathogen or disease?

No

***ToR 4: To provide diagnostic testing facilities, and, where appropriate, scientific and technical advice on disease control measures to OIE Member Countries***

8. Did your laboratory carry out diagnostic testing for other OIE Member Countries?

Yes

Name of OIE Member Country seeking assistance	Date (month)	No. samples received for provision of diagnostic support	No. samples received for provision of confirmatory diagnoses
GREECE	November	113	0
GREECE	June	37	0
HUNGARY	January	25	0
HUNGARY	February	100	0
HUNGARY	March	80	0
HUNGARY	June	300	0
HUNGARY	August	60	0
HUNGARY	October	40	0
HUNGARY	November	24	0
HUNGARY	May	8	0

9. Did your laboratory provide expert advice in technical consultancies on the request of an OIE Member Country?

No

**ToR 5: To carry out and/or coordinate scientific and technical studies in collaboration with other laboratories, centres or organisations**

10. Did your laboratory participate in international scientific studies in collaboration with OIE Member Countries other than the own?

Yes

Title of the study	Duration	Purpose of the study	Partners (Institutions)	OIE Member Countries involved other than your country
CoVetLab	September 2016- March 2017	Next Generation Sequencing for genetic characterisation of swine influenza viruses in Europe	APHA,DTU,ANSES, CVILelystad, SVA, FLI	DENMARK FRANCE GERMANY SWEDEN UNITED KINGDOM

**ToR 6: To collect, process, analyse, publish and disseminate epizootiological data relevant to the designated pathogens or diseases**

11. Did your Laboratory collect epizootiological data relevant to international disease control?

Yes

12. Did your laboratory disseminate epizootiological data that had been processed and analysed?

Yes

**13. What method of dissemination of information is most often used by your laboratory? (Indicate in the appropriate box the number by category)**

a) Articles published in peer-reviewed journals: 5

1-Montoya M, Foni E, Solórzano A, Razzuoli E, Baratelli M, Bilato D, Córdoba L, del Burgo MAM, Martinez J, Martinez-Orellana P, Chiapponi C, Perlin DS, del Real G and Amadori M (2017) Expression Dynamics of Innate Immunity in Influenza Virus-Infected Swine. Front. Vet. Sci. 4:48.doi: 10.3389/fvets.2017.00048

2-Chiapponi C., Ebranati E., Pariani E., Faccini S., Luppi A., Baioni L., Manfredi R.2, Carta V., Merenda M., Affanni P., Colucci M.E., Veronesi L., Zehender G., Foni E. 2017 Genetic analysis of human and swine influenza A viruses isolated in Northern Italy during 2010-2015. Zoonoses Public Health. 2017 Aug 8. doi: 10.1111/zph.12378.

3-Faccini Silvia, Mattia Aurora De, Chiapponi Chiara, Barbieri Ilaria, Boniotti Maria Beatrice, Rosignoli Carlo, Franzini Giuliana, Moreno Ana, Foni Emanuela, Nigrelli Arrigo Daniele (2017) Development and evaluation of a

new Real-Time RT-PCR assay for detection of proposed influenza D virus. J Virol Methods. 2017 May;243:31-34. doi: 10.1016/j.jviromet.2017.01.019. Epub 2017 Jan 30.

4-Rosignoli C., Merenda M., Faccini S., Chiapponi C., De Mattia A., Bufalo G., Garbarino C., Baioni L., Nigrelli A.D., Foni E. Infezione da virus Influenza D nel bovino in Italia. (2017) Large Animal Review, 23,123-128.

5-Foni E., Chiapponi C., Baioni L., Zanni I., Merenda M., Rosignoli C., Kyriakis C.S., Luini M.V., Mandola M. L., Bolzoni L., Nigrelli A.D., Faccini S. (2017) Influenza D in Italy: towards a better understanding of an emerging viral infection in swine. Scientific Reports, 7:11660.

b) International conferences: 2

1-Moreno A, Rovida F, Piralla A, Chiapponi C, Capra Marzani F, Campanini G, Mojoli F, Girello A, Lelli D, Vezzoli F, Prati P, Foni E, Percivalle E, Pavan A, Pozzi M, Gramegna M, Arioli E, Lotti GA, Baldanti F. 2017 Severe respiratory infection caused by swine influenza A (H1N1) virus in an immunocompetent man that was not directly exposed to pigs. 18th International Symposium of the World Association of Veterinary Laboratory Diagnosticians (WAVLD), June 7-10, 2017 : Sorrento, Italy : abstract book - p 190.

2-Moreno A., Chiapponi C., Lelli D., Baioni L., Faccini S., Luppi A., Mandola L., Rizzo F., Foni E., Lavazza A., Alborali G.L. 2017 Genetic diversity of influenza A virus in Italian pigs in the period 1998-2017. EPIZONE 11th Annual Meeting 19-21 September 2017- ANSES, Paris, France, 64.

c) National conferences: 1

Foni E., Chiapponi C., Moreno A., Barbieri I., Affanni P., Pariani E., ESNIP3 Consortium Swine influenza A virus surveillance in Europe 2010-2015 : monitoring of the antigenic and genetic evolution of swine isolates also in comparison to seasonal human influenza virus

4° Convegno Nazionale sulla Ricerca in Sanità Pubblica. Roma 6 aprile 2017

d) Other:

(Provide website address or link to appropriate information) 0

**ToR 7: To provide scientific and technical training for personnel from OIE Member Countries**

**To recommend the prescribed and alternative tests or vaccines as OIE Standards**

14. Did your laboratory provide scientific and technical training to laboratory personnel from other OIE Member Countries?

No

**ToR 8: To maintain a system of quality assurance, biosafety and biosecurity relevant for the pathogen and the disease concerned**

15. Does your laboratory have a Quality Management System certified according to an International Standard?

Yes

Quality management system adopted	Certificate scan (PDF, JPG, PNG format)
EN ISO/IEC 17025:2005	Certificato Accredia 2017.pdf

16. Is your laboratory accredited by an international accreditation body?

Yes

Test for which your laboratory is accredited	Accreditation body
Matrix(M) gene PCR	ILAC-MRA-Accredia

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

Yes

(See *Manual of Diagnostic Tests and Vaccines for Terrestrial Animals, Chapter 1.1.4*)

### **ToR 9: To organise and participate in scientific meetings on behalf of the OIE**

18. Did your laboratory organise scientific meetings on behalf of the OIE?

No

19. Did your laboratory participate in scientific meetings on behalf of the OIE?

No

### **ToR 10: To establish and maintain a network with other OIE Reference Laboratories designated for the same pathogen or disease and organise regular inter-laboratory proficiency testing to ensure comparability of results**

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

Yes

21. Was your laboratory involved in maintaining a network with OIE Reference Laboratories designated for the same pathogen or disease by organising or participating in proficiency tests?

Yes

Purpose of the proficiency tests: <sup>1</sup>	Role of your Reference Laboratory (organiser/ participant)	No. participants	Participating OIE Ref. Labs/ organising OIE Ref. Lab.
Proficiency test Real time PCR for M gene of Influenza virus	partecipant	13	OIE Reference Laboratory for Avian Influenza IzsVe Padua



<sup>1</sup> validation of a diagnostic protocol: specify the test; quality control of vaccines: specify the vaccine type, etc.

22. Did your laboratory collaborate with other OIE Reference Laboratories for the same disease on scientific research projects for the diagnosis or control of the pathogen of interest?

Yes

Title of the project or contract	Scope	Name(s) of relevant OIE Reference Laboratories
CoVetLab	Next Generation Sequencing for genetic characterisation of swine influenza viruses in Europe	APHA UK

**ToR 11: To organise inter-laboratory proficiency testing with laboratories other than OIE Reference Laboratories for the same pathogens and diseases to ensure equivalence of results**

23. Did your laboratory organise or participate in inter-laboratory proficiency tests with laboratories other than OIE Reference Laboratories for the same disease?

No

Note: See Interlaboratory test comparisons in: Laboratory Proficiency Testing at: <http://www.oie.int/en/our-scientific-expertise/reference-laboratories/proficiency-testing> see point 1.3

**ToR 12: To place expert consultants at the disposal of the OIE**

24. Did your laboratory place expert consultants at the disposal of the OIE?

No

25. Additional comments regarding your report:

1-ToR 10-Pto 21: The Laboratory participated at the Proficiency test Real time PCR for M gene of Influenza virus organized by OIE Laboratory reference for Avian Influenza in Padua. The target of the Proficiency test is the same (gene M of Influenza A virus)of the Real-time PCR for swine influenza virus the method applied follows the OIE Terrestrial Manual 2015 Chapter 2.8.7 par 1.6

2- In the last 2 years, after the first isolation in 2015 of Influenza D virus in swine,the laboratory was consistently involved in studies on epidemiology and genetic study of influenza D virus. Sistematically this infection was considered as differential diagnosis with IAV-s infection.  
Both Influenza D virus and hyperimmune sera were shared with OIE Reference Laboratory for the same virus(UK) or disease(Germany-FLI)and also with other laboratories working on human influenza virus (Italy and argentina)

