

OIE Reference Laboratory Reports Activities

Activities in 2015

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Name of disease (or topic) for which you are a designated OIE Reference Laboratory:	Swine influenza
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Name (including Title) of Head of Laboratory (Responsible Official):	Prof. Stefano Cinotti
Name (including Title and Position) of OIE Reference Expert:	Emanuela Foni, DVM, Veterinary Manager
Which of the following defines your laboratory? Check all that apply:	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
Haemagglutination inhibition test	yes	59280	5785
Direct diagnostic tests		Nationally	Internationally
PCR	yes	2941	4
Virus isolation in embrionated eggs	yes	226	0
Virus isolation in cell cultuires	yes	313	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
Virus:H1N1 A/sw/It/311368/2013	Haemagglutination inhibition test	produced	15ml	2ml	2	<input checked="" type="checkbox"/> Africa <input type="checkbox"/> Americ as <input type="checkbox"/> Asia and Pacific <input checked="" type="checkbox"/> Europe <input type="checkbox"/> Middle East
H3N2: A/sw/It/311349/2013	Haemagglutination inhibition test	produced	15ml	2ml	2	<input checked="" type="checkbox"/> Africa <input type="checkbox"/> Americ as <input type="checkbox"/> Asia and Pacific <input checked="" type="checkbox"/> Europe <input type="checkbox"/> Middle East
H1N2: A/sw/It/284922/2009	Haemagglutination inhibition test	produced	15ml	2ml	2	<input checked="" 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:H1N1 A/sw/It/311368/2013	Haemagglutination inhibition test	produced	9 ml	3ml	2	<input checked="" type="checkbox"/> Africa <input type="checkbox"/> Americ as <input type="checkbox"/> Asia and Pacific <input checked="" type="checkbox"/> Europe <input type="checkbox"/> Middle East
Htperimmune serum H3N2: A/sw/It/311349/2013	Haemagglutination inhibition test	produced	7 ml	3ml	2	<input checked="" 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 test	produced	9ml	3ml	2	<input checked="" type="checkbox"/> Africa <input type="checkbox"/> Americ as <input type="checkbox"/> Asia and Pacific <input checked="" type="checkbox"/> Europe <input type="checkbox"/> Middle East

1-H1N1 A/sw/It/302593/2010	To BIOBANKING Veterinary Resources OIE Collaborative Centre	produced	6ml		The reagents delivered to BIOBANKING VETERINARY RESOURCES OIE Collaborative Centre are available to all OIE Member Countries	<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
H1N1pdm A/sw/It/6352-17/2013	to BIOBANKING Veterinary Resources OIE Collaborative Centre	produced	6ml		The reagents delivered to BIOBANKING VETERINARY RESOURCES OIE Collaborative Centre are available to all OIE Member Countries	<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
H1N2 A/sw/It/41350-2/2011	o BIOBANKING Veterinary Resources OIE Collaborative Centre	produced	6ml		The reagents delivered to BIOBANKING VETERINARY RESOURCES OIE Collaborative Centre are available to all OIE Member Countries	<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
H1N1pdm A/sw/It/6352-17/2013	to BIOBANKING Veterinary Resources OIE Collaborative Centre	produced	6ml		The reagents delivered to BIOBANKING VETERINARY RESOURCES OIE Collaborative Centre are available to all OIE Member Countries	<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
H1avN1 A/swine/Italy/28762-3/2013	to BIOBANKING Veterinary Resources OIE Collaborative Centre	produced	6ml		The reagents delivered to BIOBANKING VETERINARY RESOURCES OIE Collaborative Centre are available to all OIE Member Countries	<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

H1N2 A/swine/Italy/57680/2011	to BIOBANKING Veterinary Resources OIE Collaborative Centre	produced	6ml		The reagents delivered to BIOBANKINK VETERINARY RESOURCES OIE Collaborative Centre are available to all OIE Member Countries	<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
H1huN2 A/swine/Italy/55228/2012	to BIOBANKING Veterinary Resources OIE Collaborative Centre	produced	6ml		The reagents delivered to BIOBANKINK VETERINARY RESOURCES OIE Collaborative Centre are available to all OIE Member Countries	<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
H1pdm09N2 A/swine/Italy/73449/2013	to BIOBANKING Veterinary Resources OIE Collaborative Centre	produced	6ml		The reagents delivered to BIOBANKINK VETERINARY RESOURCES OIE Collaborative Centre are available to all OIE Member Countries	<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
H1avN2 A/swine/Italy/16235/2013	to BIOBANKING Veterinary Resources OIE Collaborative Centre	produced	6ml		The reagents delivered to BIOBANKINK VETERINARY RESOURCES OIE Collaborative Centre are available to all OIE Member Countries	<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

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?

No

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

Yes

Name of the OIE Member Country receiving a technical consultancy	Purpose	How the advice was provided
UNITED KINGDOM	information on NGS methods for influenza virus sequencing	e-mail
INDIA	sharing information on reagents and primer to be used for confirmatory and subtyping test fo swine influenza virus	e-mail

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)
CoVetLab	until May 2015	Development and validation of improved real-time reverse transcription polymerase chain reaction (RRT-PCR) assays for differentiation of swine influenza virus (SIV) sub-types H1N1, H1N2 and H3N2 in European pigs and the variant North American H3N2 sub-type.	DTU (Denmark), ANSES (France), CVI-Lelystad (The Netherlands), SVA (Sweden) and Apha (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: 3

1- Baumann J., Kouassi N. M., Foni E., Klenk H.D., Matrosovich M. (2015) H1N1 Swine Influenza Viruses Differ from Avian Precursors by a Higher pH Optimum of Membrane Fusion. *J Virol.* 2015 Nov 25. pii: JVI.02332-15. [Epub ahead of print]

2-Solórzano A, Foni E, Córdoba L, Baratelli M, Razzuoli E, Bilato D, Martín del Burgo MA, Perlin DS, Martínez J, Martínez-Orellana P, Fraile L, Chiapponi C, Amadori M, del Real G, Montoya M. 2015. Cross-species infectivity of H3N8 influenza virus in an experimental infection in swine. *J Virol* 89:11190–11202. doi:10.1128/JVI.01509-15

3-Simon J. Watson, Pinky Langat, Scott M. Reid, Tommy Tsan-Yuk Lam, Matthew Cotten, Michael Kelly, Kristien Van Reeth, Yu Qiu, Gaëlle Simon, Emilie Bonin, Emanuela Foni, Chiara Chiapponi, Lars Larsen, Charlotte Hjulsgaard, Iwona Markowska-Daniel, Kinga Urbaniak, Ralf Dürrwald, Michael Schlegel, Anita Huovilainen, Irit Davidson, Ádám Dán, Willie Loeffen, Stephanie Edwards, Michel Bublout, Thais Vila, Jaime Maldonado, Laura Valls, ESNI3 Consortium, Ian H. Brown, Oliver G. Pybus, Paul Kellam. (2015) Molecular Epidemiology and Evolution of Influenza Viruses Circulating within European Swine between 2009 and 2013. *J. Virol.* 2015 Oct;89(19):9920-31. doi: 10.1128/JVI.00840-15. Epub 2015 Jul 22.

b) International conferences: 9

1-Solórzano A, Foni E, Córdoba L, Baratelli M, Razzuoli E, Bilato D, Del_Burgo MAM, Perlin DS, Martinez J, Martinez_Orellana P, Fraile L, Chiapponi C, Del_Real G, Amadori M, Montoya M Immune response to influenza infection of swine, friend or foe? *Immunity to Veterinary Pathogens: Informing Vaccine Development : Keystone Symposia on Molecular and Cellular Biology, January 20-25, 2015 Colorado, USA . - [Silverthorne, CO : Keystone Symposia , 2015] . - (The 2014-2015 Keystone Symposia Meeting Series . - p 36)*

2-Foni Emanuela, Chiapponi Chiara, Baioni Laura, Merenda Marianna, Luppi Andrea, Rugna Gianluca, Mandalari Carmen, Tamba Marco, Pellacini Mario, Forlenza John (2015) High Genetic Variability of Swine Influenza Virus in a Confined Area of Northern Italy. 3rd International Symposium on Neglected Influenza Viruses 15th-17th April 2015 Athens Georgia USA.

3-Lo Vecchio C., Rizzo F., Chiapponi C., Sona B., Origlia S., Zoppi S., Bertolini S., Ru G., Foni E., Mandola M.L. (2015) Recombinant Swine Influenza Virus detected in Italy. 3rd International One Health Congress. Amsterdam March 15th-18th 2015

Lo Vecchio C., Rizzo F., Chiapponi C., Sona B., Origlia S., Zoppi S., Bertolini S., Ru G., Foni E., Mandola M.L. (2015) Reassortant Swine Influenza A detected in a pig-farm in Piedmont (Italy) *Proceedings Xth International Congress for Veterinary Virology- 9th Annual Meeting of EPIZONE. Montpellier August 31st-September 3rd, 226-227.*

4- Chiapponi C., Affanni P., Pariani E., Baioni L., Luppi A., Faccini S., Veronesi L., Colucci M.E., Amendola A., Zanetti A., Foni E. (2015) comparative whole genome characterization of swine and human influenza A viruses isolated during surveillance activity in Northern Italy (2010-2014): preliminary results. Abstract n. 515. 3rd International One Health Congress. Amsterdam March 15th-18th 2015.

5-Moreno A., Vaccari G., Chiapponi C., Zaccaria G., Lelli D., Foni E., Alborali G.L., Baioni L., Lavazza A., Cordioli P.(2015) multiple reassortment events involving swine and human influenza viruses in the Italian pig farms. 3rd International One Health Congress. Amsterdam March 15th-18th 2015. Oral communication

6-Simon G., Larsen L.E., Dürrwald R., Foni E., Harder T., Van Reeth K., Markowska-Daniel I., Reid S.M., Dan A., Maldonado J., Huovilainen A., Billinis C., Davidson I., Reid S. M., Brown I.H., Loeffen W. (2015) Swine influenza viruses in circulation in European pigs exhibit an increasing genetic diversity since last pandemic in 2009.

Proceedings of 7th European Symposium of Porcine Health Management April 22th-24th Nantes, France, 80. 7-Solórzano A, Foni E, Córdoba L, Baratelli M, Razzuoli E, Bilato D, Martin_Del_Burgo MA, Perlin DS, Martínez J, Martínez_Orellana P, Fraile L, 8-Chiapponi C, Amadori M, Del_Reale G, Montoya M. Cross-species infectivity of H3N8 influenza virus in an experimental infection in swine. 5th European veterinary immunology workshop (EVIW) : Vienna, Austria, 2nd-4th September 2015, p 124.

9-Reid S., Simon G., Loeffen W., Larsen L., Zohari S., Chiapponi C., Harder T., Gorin S., Krog J. S.4, Foni E., Brookes S.M., Brown I H. (2015) Development and validation of molecular tools for sub-typing swine influenza viruses. Influenza 2015: One Influenza, One World, One Health. 08-10 September 2015 St. Hilda's College , Oxford, UK, p.19.

c) National conferences: 4

1-Foni E., Chiapponi C., Baioni L., Merenda M. , Mandalari C., Luppi A., Rugna G., Tamba M., Pellacini M., Forlenza J. (2015) Elevata variabilità genetica di virus influenzale suino in una delimitata area della Pianura Padana. Atti della Società Italiana di Patologia ed Allevamento dei Suini. 19-20 Marzo 2015 Montichiari (BS) Volume XLI, 231-239

2-Razzuoli E, Montoya M, Foni E, Baratelli M, Bilato D, Córdoba L, Del_Burgo MAM, Martinez J, Martinez J, Martinez-Orellana P, Chiapponi C, Perlin DS, Del_Real G, Ferrari A, Amadori M Innate immune responses in broncho-alveolar fluids after infection with swine-adapted or non-adapted influenza virus strains. Atti del LXIX Convegno Nazionale della Società Italiana delle Scienze Veterinarie (SISVET) : XII Convegno AIPVet, Il Convegno RNIV, XV Convegno SICV, XIII Convegno SIRA, XI Convegno So.Fi.Vet : Perugia, 15-17 Giugno 2015 . - [s.l. : s.n. , 2015] . - p 368-369.

3- Faccini S, De_Mattia A, Barbieri I, Chiapponi C, Rosignoli C, Franzini G, Foni E, Nigrelli AD. Prima segnalazione della presenza del virus dell'influenza D in Italia . XVI Congresso Nazionale SIDiLV : 30 Settembre - 2 Ottobre 2015 Montesilvano (PE) : volume degli atti . - [s.l. : Società Italiana Diagnostica di Laboratorio Veterinaria (SIDiLV) , 2015] . - p 43-44.

4- Lo_Vecchio C, Rizzo F, Chiapponi C, Sona B, Origlia S, Zoppi S, Dondo A, Bertolini S, Ru G, Foni E, Mandola ML Influenza suina : sorveglianza epidemiologica nella provincia di Cuneo. XVI Congresso Nazionale SIDiLV : 30 Settembre - 2 Ottobre 2015 Montesilvano (PE), p 212-213.

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	Scan-Parma-20150105104146.pdf

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

No

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 2014, Chapter 1.1.3a)

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: ¹	Role of your Reference Laboratory (organiser/participant)	No. participants	Participating OIE Ref. Labs/ organising OIE Ref. Lab.
Development and validation of molecular tools for sub-typing swine influenza viruses	participant	6	Ian Brown Animal and Plant Health Agency New Haw, Addlestone Surrey KT15 3NB Weybridge UNITED KINGDOM
Proficiency test Real time PCR for M gene of Influenza virus	participant	13	OIE Reference Laboratory for Avian Influenza. IZSVE Padua

¹ 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	Development and validation of molecular tools for sub-typing swine influenza viruses	Development and validation of molecular tools for sub-typing swine influenza viruses

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: