OIE Reference Laboratory Reports Activities

Activities in 2016

This report has been submitted : 2017-01-17 12:26:14

Name of disease (or topic) for which you are a designated OIE Reference Laboratory:	Highly and low pathogenic avian influenza
Address of laboratory:	Anand Nagar Bhopal 462 021 Madhya Pradesh INDIA
Tel.:	+91-755 275 92 04
Fax:	+91-755 275 88 42
E-mail address:	ctosh@hsadl.nic.in
Website:	www.nihsad.nic.in
Name (including Title) of Head of Laboratory (Responsible Official):	Dr. V.P. Singh, Director
Name (including Title and Position) of OIE Reference Expert:	Chakradhar Tosh, Principal Scientist
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	
Indirect diagnostic tests		Nationally	Internationally
HI	Yes	1421	4
AGID	Yes	6231	0
Direct diagnostic tests		Nationally	Internationally
RT PCR	Yes	4757	66
Real time RT PCR	Yes	3392	132
Virus Isolation	Yes	10531	22
Nucleotide sequencing & molecular pathotyping	Yes	22	1

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?

No

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
BHUTAN	October	5	0
BHUTAN	November	17	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?

No

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: 07
1. Bhat S, Nagarajan S, Kumar M, Murugkar HV, Kalaiyarasu S, Venkatesh G, Tosh C. (2016) Antigenic characterization of H5N1 highly pathogenic avian influenza viruses isolated from poultry in India, 2006-2015. Arch. Virol. Nov 3 (DOI: 10.1007/s00705-016-3134-y

2. Kalaiyarasu S, Kumar M, Kumar DS, Bhatia S, Dash SK, Bhat S, Khetan RK, Nagarajan S. (2016) Highly pathogenic avian influenza H5N1 virus induced cytokine dysregulation with suppressed maturation of chicken monocyte derived dendritic cells. Microbiol Immunol. 60(10): 687-693.

3. Tosh C, Nagarajan S, Kumar M, Murugkar HV, Venkatesh G, Shukla S, Mishra A, Mishra P, Agarwal S, Singh B, Dubey P, Tripathi S, Kulkarni DD. (2016) Multiple introductions of a reassortant H5N1 avian influenza virus of clade 2.3.2.1c with PB2 gene of H9N2 subtype into Indian poultry. Infect Genet Evol. 43:173-178.

4. Dash SK, Kumar M, Kataria JM, Nagarajan S, Tosh C, Murugkar HV, Kulkarni DD. (2016) Partial heterologous protection by low pathogenic H9N2 virus against natural H9N2-PB1 gene reassortant highly pathogenic H5N1 virus in chickens. Microb Pathog. 95:157-65.

5. Ranaware PB, Mishra A, Vijayakumar P, Gandhale PN, Kumar H, Kulkarni DD, Raut AA. (2016) Genome Wide Host Gene Expression Analysis in Chicken Lungs Infected with Avian Influenza Viruses. PLoS One 11(4):e0153671,

6. Das, B.R., Kumar, M., Murugkar, H.V., Nagarajan, S., Senthilkumar, D., Kalaiyarasu, S., Kulkarni, D.D., Tosh, C. (2016) Experimental inoculation of a crow derived influenza A (H5N1) virus in chickens and its pathological and genetic characterization. Indian Journal of Animal Sciences 86 (3): 238–242.

7. Redda, Y.T., Venkatesh, G., Kalaiyarasu, S., Bhatia, S., Kumar, D.S., Nagarajan, S., Pillai,A., Tripathi, S., Kulkarni, D.D., Dubey, S.C. (2016) Expression and purification of recombinant H5 HA1 protein of H5N1 avian influenza virus in E. coli and its application in indirect ELISA. J Immunoassay Immunochem. 37 (4):346-58.

b) International conferences: 03
1. Tosh C. & Nagarajan S., Divergence and evolution of H5 subtype of avian Influenza viruses, International conference on “Global perspectives in virus disease management,” ICAR-Indian Institute of Horticultural Research, Bengaluru, India, 8-10 December, 2016.
2. Hati Boruah JL, Venkatesh G, Senthil Kumar D, Nagarajan S, Bhatia S, Tosh C, Shukla S, Singh VP, Prokaryotic expression, purification, refolding and biological activity of recombinant Haemagglutinin protein of H5N1 Avian Influenza Virus, International conference on “Global perspectives in virus disease management,” ICAR-Indian Institute of Horticultural Research, Bengaluru, India, 8-10 December, 2016.
3. Tosh C. & Nagarajan S., Control of avian influenza in India: A challenge, Global Symposium on Animal Health: Newer technologies and their applications and XXIX Annual Convention of Indian Association of Veterinary Microbiologists, Immunologists and Specialists in Infectious Diseases, Jointly Organized by Department of Microbiology, College of Veterinary Science, Assam Agricultural University, Khanapara, and ICAR-National Research Centre on Pig, Rani, Guwahati, Assam, India, 12-14 February, 2016.

c) National conferences: 05
1. Pathak A, Murugkar HV, Manoj Kumar, Nagarajan S, Tosh C, Sahu N, Athira CK, Sood R, Role of Bamboo shrimps (Atyopsis moluccensis) in persistence of low pathogenic avian influenza virus in water, XIV Annual Conference of

Indian Association of Veterinary public Health Specialists, Udaipur, Rajasthan, India, 21-22 November, 2016.
2. Sahu N, Murugkar HV, Manoj Kumar, Pathak A, Tosh C, Nagarajan S, Sood R, Pateriya A, Assessment of viral load in meat from turkeys infected with two isolates of highly pathogenic (H5N1) avian influenza virus, XIV Annual Conference of Indian Association of Veterinary public Health Specialists, Udaipur, Rajasthan, India, 21-22 November, 2016.
3. Kombiah S, Manoj Kumar, Murugkar HV, Nagarajan S, Tosh C, Gautam S, Senthil Kumar D, Kalaiyarasu S, Rajukumar K, Pateriya AK, Karikalan M, Sharma AK, Singh R, Singh VP, Pathobiology of H9N2-PB2 reassortant highly pathogenic avian influenza H5N1 virus in BALB/c mice, XXXIII Annual Conference of Indian Association of Veterinary Pathologists, College of Veterinary Science & A.H., Durg, Chhattisgarh, India, 9 - 11 November, 2016.
4. Bhat S, Nagarajan S, Kumar Manoj, Murugkar HV, Kalaiyarasu S, Venkatesh G, Tosh C, Antigenic analysis of highly pathogenic avian influenza H5N1 viruses isolated from poultry in India, 2006-2015. III AAHP Convention & National Symposium on Poultry Health and Welfare, ICAR-Central Coastal Agricultural Research Institute, Goa, India, 20 - 21 October, 2016.
5. Sood R, Avian Influenza and Emergence of Novel Influenza Strains: A Threat of Pandemics? 34th Annual Convention of ISVM and National symposium, college of Veterinary Sciences, GADVASU, Ludhiana, Punjab, 17-19 February, 2016.

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?

No

Explain Quality Management System in adoption process or currently in place
ISO 17025 under process

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, 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?

Yes

Title of event	Date (mm/yy)	Location	Role (speaker, presenting poster, short communications)	Title of the work presented
FAO's Regional consultation to strengthen the Bioinformatics capacity in alignment with the Regional Strategic Framework for Laboratory Capacity Building	10 to 12 May, 2016	Bangkok, Thailand	Speaker	Current capacity for bioinformatics at ICAR-NIHSAD and future needs
Fourth Laboratory Directors' Meeting and Workshop for SAARC Member Countries	1 to 2 June, 2016	Dhaka, Bangladesh	Speaker	Country Laboratory Updates - ICAR-National Institute of High Security Animal Diseases, Bhopal, India

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?

No

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?

No

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?

No

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:

Participated in OFFLU Teleconferences on:
i. WHO vaccine composition meeting (21 July, 2016)
ii. Wildlife group on H5N8 avian influenza (22 November, 2016)