OIE Reference Laboratory Reports Activities

Activities in 2019

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Name of disease (or topic) for which you are a designated OIE Reference Laboratory:	Hendra and Nipah virus diseases
Address of laboratory:	CSIRO Livestock Industries 5 Portarlington Road Private Bag 24 (Ryrie Street) Geelong 3220, Victoria AUSTRALIA
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Name (including Title) of Head of Laboratory (Responsible Official):	Professor Trevor Drew, Director
Name (including Title and Position) of OIE Reference Expert:	Dr Kim Halpin, Pathology and Pathogenesis Group Leader
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
Hendra ELISA	Yes	1480	7
Hendra DIVA ELISA	No	433	0
Hendra SNT	Yes	1330	6
Nipah ELISA	Yes	132	264
Nipah SNT	Yes	42	8
Direct diagnostic tests		Nationally	Internationally
Hendra IHC	Yes	26	0
Hendra qPCR	Yes	941	0
Nipah qPCR	Yes	24	0
Virus Isolation	Yes	5	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
HeV PCR – Network quality (positive) control	HeV qPCR	Produced in-house	5ml	0	Australian laboratory network	☐Africa ☐Americas ☒Asia and Pacific ☐Europe ☐Middle East
HeV positive control sera	HeV ELISA	Produced in-house	3ml	0	Australian laboratory network	☐Africa ☐Americas ☒Asia and Pacific ☐Europe ☐Middle East
HeV live virus	live virus for test development	Produced in-house	0	2ml	Switzerland, Italy	☐Africa ☐Americas ☐Asia and Pacific ☒Europe ☐Middle East
Nipah ELISA kit reagents	Nipah ELISA	Produced in-house	0	10,000 tests	Thailand	☐Africa ☐Americas ☒Asia and Pacific ☐Europe ☐Middle East
NiV live virus	live virus for test development	Produced in-house	0	2ml	Switzerland, Italy	☐Africa ☐Americas ☐Asia and Pacific ☒Europe ☐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
THAILAND	2019 Regional Bioinformatics Training Workshop	Training in Thailand to participants from multiple countries

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

If the answer is yes, please provide details of the data collected:
see below

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

Yes

If the answer is yes, please provide details of the data collected:
see below

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: 0

b) International conferences: 4
1. Halpin, K et al. Hendra DIVA assay for the detection of antibodies in vaccinated horses. Nipah Virus International Conference, Singapore, 9 December 2019.
2. Clayton, B et al. Oronasal challenge of ferrets with henipaviruses. Nipah Virus International Conference, Singapore, 9 December 2019.
3. Barr, J et al. Determination of the suitability of canine distemper virus vaccinated ferrets for Nipah virus infection studies. Nipah Virus International Conference, Singapore, 9 December 2019.
4. Marsh, G et al. Efficacy testing of candidate swine vaccines against Nipah virus. Nipah Virus International Conference, Singapore, 9 December 2019.

c) National conferences: 1
1. Halpin, K. The high profile viruses of bats. Australian Society of Microbiology (Queensland) Meeting, Bribie Island, 9 November 2019

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?

Yes

a) Technical visits: 80
b) Seminars: 0
c) Hands-on training courses: 66
d) Internships (>1 month): 0

Type of technical training provided (a, b, c or d)	Country of origin of the expert(s) provided with training	No. participants from the corresponding country
c	Germany	3
c	United States	3
c	United Kingdom	3
c	Canada	4
a	Malaysia	20
a	Philippines	20
a	Vietnam	10
a	Bangladesh	30
c	Thailand	10
c	Singapore	25
c	Bangladesh & Lao	2
c	Ivory Coast	1
c	Cameroon	2
c	Ethiopia	2
c	Sudan	1
c	Morocco	3
c	Ghana	1
c	Botswana	1
c	Burkhina Faso	1
c	Chad	1
c	Mozambique	1
c	Myanmar	1
c	Namibia	1
c	Nepal & Mongolia	2
c	Senegal & Marli	2
c	Tunisia	1

c	Tanzania	1
c	Zambia	1
c	Kenya	1
c	DR Lao & DRC	2

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?

Yes

Quality management system adopted	Certificate scan (PDF, JPG, PNG format)
ISO 17025	NATA Scope of Accreditation November 2018.pdf
ISO 9001	BSI Certificate 9001 issue 2019.pdf
ISO 14001	BSI Certificate 14001 issue 2018.pdf

16. Is your quality management system accredited?

Yes

Test for which your laboratory is accredited	Accreditation body
20.10 Microbiology For companion animals, production animals, production avian species, zoo animals, wildlife, aquatic animals, equine species and avian species	NATA (ILAC affiliated)
20.10 Microbiology For companion animals, production animals, production avian species, zoo animals, wildlife, aquatic animals, equine species and avian species	NATA (ILAC affiliated)
20.13 Other Microorganisms 01 Diagnostic microbiology - incorporating identification by simple microscopy, cultural methods of detection and identification of organisms, including Innocuity testing	NATA (ILAC affiliated)
20.14 Virology 01 Diagnostic virology - non-cultural (immunological) methods of detection 02 Diagnostic virology - cultural methods of detection and identification of organisms Including Innocuity testing 05 Quantitative procedures	NATA (ILAC affiliated)
20.15 Prions 01 Histological identification of prion disease lesions 02 Detection of prion protein by immunological methods (including ELISA, Western Blots, immunohistochemistry) 04 Detection of prion protein by bioassay	NATA (ILAC affiliated)
20.25 Serology of Infection For companion animals, production animals, production avian species, zoo animals, wildlife, equine species and avian species 01 Agar gel immunodiffusion tests 02 Complement fixation tests 03 Enzyme linked immunosorbent assays 04 Haemagglutination inhibition 05 Indirect fluorescent antibody tests 06 Microscopic agglutination tests 08 Serum agglutination tests 09 Serum neutralisation tests 10 Latex agglutination tests 99 Other - Testing for rabies and rabies related lyssaviruses on human specimens	NATA (ILAC affiliated)
20.50 Anatomical Pathology For companion animals, production animals, production avian species, laboratory animals, zoo animals, wildlife, aquatic animals, equine species and avian species	NATA (ILAC affiliated)
20.52 Histopathology 01 Processing of fixed specimens for histology 04 Immunohistochemistry 05 Histological interpretation	NATA (ILAC affiliated)
20.53 Electron Microscopy 01 Transmission electron microscopy 02 Scanning electron microscopy 04 Immunohistochemistry electron microscopy	NATA (ILAC affiliated)
20.54 Necropsy	NATA (ILAC affiliated)
20.80 Molecular Diagnostics For companion animals, production animals, production avian species, aquatic animals, equine species and avian species 01 Identification by extraction and amplification 02 Sequencing 03 Genotyping 99 Other - Testing for rabies and rabies related lyssaviruses on human specimens by molecular techniques	NATA (ILAC affiliated)
20.95 Foreign Regulatory Requirements 01 European Union Directives for Animal Health Council Directive 88/407/EEC of 14 June 1988 Council Directive 64/432/EEC of 26 June 1964 Commission Implementing Decision 2011/630/EU of 20 September 2011 Council Directive 89/556/EEC of 25 September 1989 Commission Decision 2006/168/EC of 4 January 2006 Council Directive 91/68/EEC of 28 January 1991 Council Directive 92/65/EEC of 13 July 1992 Commission Decision 2010/472/EU of 26 August 2010 Commission Decision 2004/211/ED of 6 January 2004 Commission Decision 2010/471/EU of 26 August 2010 For the following species for the following diseases using the following methods of testing: Ovine - EHD, c-ELISA, SNT	NATA (ILAC affiliated)
1.12 Weighing devices [In-House Calibration] 01 Precision laboratory balances [In-House Calibration] with least uncertainties of measurement of - 5 in 10^6 or 56 µg (whichever is greater) up to 3 kg	NATA (ILAC affiliated)

1.80 Calibration of temperature measuring equipment [In-House Calibration] 41 Digital temperature indicator systems [In-House Calibration] with least uncertainties of measurement of - 0.5ºC from -20 to 125ºC	NATA (ILAC affiliated)
1.84 Testing of controlled enclosures [In-House Calibration] 02 Incubators [In-House Calibration] with least uncertainties of measurement of - 0.5ºC from 0 to 125ºC by the methods of - AS 2853 03 Autoclaves and sterilising ovens [In-House Calibration] with least uncertainties of measurement of - 0.5ºC from 0 to 125ºC	NATA (ILAC affiliated)
13.69 Controlled environments [In-House Calibration] by the methods of - AS 1807.1, .5, .6, .22, .23 AS/NZS 2243.8 Appendices A and B 01 Clean rooms and workstations [In-House Calibration] .02 Biological safety cabinets [In-House Calibration] .03 Fume cupboards [In-House Calibration]	NATA (ILAC affiliated)
42.01 Human and Veterinary Pathology Services Bacteria – Serology of infection Bacteria – Molecular diagnostics – Identification by Extraction and Amplification Bacteria – Detection and Identification of virus antigen Parasites-Serology of infection Parasites – Molecular diagnostics – Identification by Extraction and Amplification Parasites – Detection and identification of virus antigen Fungi and Yeast – Serology of infection Fungi and Yeast – Molecular diagnostics – Identification by Extraction and Amplification Fungi and Yeast – Detection and identification of virus antigen Molecular Diagnostics – Identification by Extraction and Amplification Blood and Blood products – Serology of infection	NATA (ILAC affiliated)
Accreditation No: 13546 (Scope Last Changed 08/12/14)	NATA (ILAC affiliated)

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
Regional Meeting for OIE Reference Centres for Asia and the Pacific	03/2019	Tokyo, Japan	Participant	Discussion of topics related to the improvement of the implementation of the Terms of References within the activities of OIE Reference Centres

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?

Not applicable (Only OIE Reference Lab. designated for disease)

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?

Not applicable (Only OIE Reference Lab. designated for disease)

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?

Not applicable (Only OIE Reference Lab. designated for disease)

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?

Yes

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

Purpose for inter-laboratory test comparisons[1]	No. participating laboratories	Region(s) of participating OIE Member Countries
Detection of terrestrial diseases by Australian laboratories	12	☐Africa ☐Americas ☒Asia and Pacific ☐Europe ☐Middle East

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?

Yes

Kind of consultancy	Location	Subject (facultative)
Invited speaker, regional meeting	Tokyo, Japan	Regional Meeting for OIE Reference Centres for Asia and the Pacific

25. Additional comments regarding your report: