

OIE Reference Laboratory Reports Activities

Activities in 2021

This report has been submitted : 2022-01-18 10:36:34

Name of disease (or topic) for which you are a designated OIE Reference Laboratory:	Marek s disease
Address of laboratory:	Ash Road Pirbright Woking Surrey GU24 0NF UNITED KINGDOM
Tel.:	+44-1487 23 14 15
Fax:	
E-mail address:	venugopal.nair@pirbright.ac.uk
Website:	https://www.pirbright.ac.uk/diagnostics-surveillance/mareks-disease-virus-reference-laboratory
Name (including Title) of Head of Laboratory (Responsible Official):	Professor Nair Venugopal
Name (including Title and Position) of OIE Reference Expert:	Professor Nair Venugopal
Which of the following defines your laboratory? Check all that apply:	Academic

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			
Direct diagnostic tests			
Quantitative PCR test for Marek's disease diagnosis	No	780	1
Virus isolation in cell culture	Yes	12	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?

No

4. Did your laboratory produce vaccines?

Yes

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
FRANCE	May_Dec	30	30

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
SPAIN	Advice and reagents for establishment of real-time PCR to distinguish CVI988 from virulent MDV strains. MTA prepared and DNA from two virulent MDV strains sent to allow testing of differential assay.	Advice given on assay set-up
UNITED KINGDOM	Advice for MDV-infection of experimental chickens for preparation of MDV antigen for commercial purposes; and PCR testing of samples from experimental chickens to confirm successful infection	Provided the protocols and tested the samples
UNITED KINGDOM	MDV-1 DNA required as internal negative control for Non-Vesicular Reference Laboratory real-time PCR tests.	DNA provided, with target sequence information, primer and probe sequences.
SAUDI ARABIA	Advise requested on the problems with MD histopathology diagnosis	Advise provided on the histopathological interpretation

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?

No

If the answer is no, please provide a brief explanation of the situation:

Covid-19 restrictions affected the plans

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

No

If the answer is no, please provide a brief explanation of the situation:
could not do any studies due to Covid-19 restrictions

**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: 9

1. Liam A Wilson, Martyn Lewis, Susan J Baigent, Valerie Abate, Brooke A Dolega, Linda R Morrison, Christopher Poulos, David Walker (Roslin Institute, APHA, MDVRL). Marek's disease in a male Indian peafowl (*Pavo cristatus*) clinically presenting as ocular disease and paraplegia (Manuscript submitted).
2. Susan Baigent, Venugopal Nair, Aidin Molouki (2021) Survey of Marek's disease viruses currently circulating in UK backyard chicken flocks. APHA Quarterly Avian Disease Report.
3. Aidin Molouki, Arash Ghalyanchilangeroudi, Alireza Abtin, Fatemeh Eshtartabadi, Mohsen Akhijahani, Zahra ZiafatiKafi, Sajad Babayi, Esmaeel Allahyari, Loghman Ahmadzadeh, Mohammad Hossein Fallah Mehrabadi, Swee Hua Erin Lim, Kiarash Rouhani, Hossein Hosseini, Mohammad Abdoshah, Venugopal Nair, Abdelhamid Shoushtari (2021) Report of a new meq gene size: The first study on genetic characterization of Marek's disease viruses circulating in Iranian commercial layer and backyard chicken. Poultry Science <https://doi.org/10.1080/00071668.2021.1963677>.
4. Man Teng, Yongxiu Yao, Venugopal Nair, Jun Luo (2021) Latest Advances of Virology Research using CRISPR/Cas9-based Gene Editing Technology and its Application to Vaccine Development Viruses 2021, 13, 779. <https://doi.org/10.3390/v13050779>.
5. Na Tang, Yaoyao Zhang, Zhiqiang Shen, Yongxiu Yao, Venugopal Nair (2021) Application of CRISPR-Cas9 editing for virus engineering and the development of recombinant viral vaccines CRISPR Journal 4, 4. DOI: 10.1089/crispr.2021.0017).
6. Sun, Aijun, Yang, Shuaikang, Luo, Jun, Teng, Man, Xu, Yijie, Wang, Rui, Zhu, Xiaojing, Zheng, Luping, Wu, Yanan, Yao, Yongxiu, Nair, Venugopal, Zhang, Gaiping and Zhuang, Guoqing (2021) UL28 and UL33 homologs of Marek's disease virus terminase complex involved in the regulation of cleavage and packaging of viral DNA are indispensable for replication in cultured cells. Vet Res DOI: 10.1186/s13567-021-00901-5.
7. Zhi-jian Zhu, Man Teng, Hui-Zhen Li, Lu-Ping Zheng, Jin-Ling Liu, Yongxiu Yao, Venugopal Nair, Gai-Ping Zhang & Jun Luo (2021) Virus-encoded miR-155 ortholog in Marek's disease virus promotes cell proliferation via suppressing apoptosis by targeting tumor suppressor WWOX. Veterinary Microbiology 252:108919. doi: 10.1016/j.vetmic.2020.108919.
8. Nair, V., I. Gimeno, and J. Dunn, Marek's Disease, in Diseases of Poultry, D.E. Swayne, et al., Editors. 2020, Wiley. p. 550-587.
9. Nitin Kamble, Angila Gurung, Benedikt B. Kaufer, Ansar Ahmed Pathan and Shahriar Behboudi (2021) Marek's Disease Virus Modulates T Cell Proliferation via Activation of Cyclooxygenase 2-Dependent Prostaglandin E2. Front. Immunol., 22 December 2021 | <https://doi.org/10.3389/fimmu.2021.801781>

b) International conferences: 2

1. V Nair gave a talk on 'Marek's Disease evolution and control prospects' at the launch of PREVEXXION RN at Boehringer Ingelheim 13 April 2021.
2. V Nair gave an invited talk on 'Vaccines as important tools for One-Health in the 21st Century' at the International Webinar on Genomics & Gene Technology at Kerala University, Kerala, India on 24 March 2021.

c) National conferences: 0

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?

Yes

Quality management system adopted	Certificate scan (PDF, JPG, PNG format)
UKAS Accreditation 17025	MDVRL 17025 accreditation UKAS document.pdf

16. Is your quality management system accredited?

Yes

Test for which your laboratory is accredited	Accreditation body
Quantitative PCR diagnosis of Marek's disease virus	UKAS 17025

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?

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?

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:

MDVRL activities have increased in terms of sample submissions, diagnosis advice and requests for methods and protocols. Most of the samples submitted are still of national origin, which is partly due to the Covid-19 restrictions on sending samples from overseas. But we continue to provide technical advise to queries from many member countries. Most of the increased activities are carried out using the funding from the Pirbright Institute MDVRL or from charges for the tests, as we do not receive any funding support from the OIE.