

WOAH Reference Laboratory Reports Activities 2022

Activities in 2022

This report has been submitted : 26 avril 2023 10:53

Laboratory Information

Name of disease (or topic) for which you are a designated WOA Reference Laboratory:	Rabies
Address of laboratory:	KVAFSU-CVA Rabies Diagnostic Laboratory Department of Microbiology Veterinary College Karnataka Veterinary, Animal and Fisheries Sciences University (KVAFSU) Hebbal, Bengaluru 560024 INDIA
Tel.:	080 29532287
E-mail address:	rdlkvafsucva@gmail.com
Website:	
Name (including Title) of Head of Laboratory (Responsible Official):	Dr. Shrikrishna Isloor, Laboratory Director & Professor KVAFSU-CVA Rabies Diagnostic Laboratory. Department of Microbiology Veterinary College Karnataka Veterinary, Animal and Fisheries Sciences University (KVAFSU) Hebbal, Bengaluru 560024 INDIA
Name (including Title and Position) of WOA Reference Expert:	Dr. Shrikrishna Isloor, Laboratory Director & Professor KVAFSU-CVA Rabies Diagnostic Laboratory. Department of Microbiology Veterinary College Karnataka Veterinary, Animal and Fisheries Sciences University (KVAFSU) Hebbal, Bengaluru 560024 INDIA
Which of the following defines your laboratory? Check all that apply:	Governmental Academic institution

TOR1: DIAGNOSTIC METHODS

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 WOA Manual (Yes/No)	Total number of test performed last year	
Indirect diagnostic tests		Nationally	Internationally
Immunochemistry (LFA)	No	40	

Direct diagnostic tests		Nationally	Internationally
Direct Fluorescent Antibody (DFA)	Yes	298	
Rapid Fluorescent Focus inhibition Test (RFFIT)	Yes	390	
PCR	Yes	56	

TOR2: REFERENCE MATERIAL

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

No

3. Did your laboratory supply standard reference reagents (nonWOAH-approved) and/or other diagnostic reagents to WOA?H Members?

No

4. Did your laboratory produce vaccines?

No

5. Did your laboratory supply vaccines to WOA?H Members?

No

TOR3: NEW PROCEDURES

6. Did your laboratory develop new diagnostic methods for the designated pathogen or disease?

No

7. Did your laboratory validate diagnostic methods according to WOA?H Standards for the designated pathogen or disease?

No

8. Did your laboratory develop new vaccines for the designated pathogen or disease?

No

9. Did your laboratory validate vaccines according to WOA?H Standards for the designated pathogen or disease?

No

TOR4: DIAGNOSTIC TESTING FACILITIES

10. Did your laboratory carry out diagnostic testing for other WOA?H Members?

No

11. Did your laboratory provide expert advice in technical consultancies on the request of an WOA?H Member?

Yes

NAME OF THE WOA?H MEMBER COUNTRY RECEIVING A TECHNICAL CONSULTANCY	PURPOSE	HOW THE ADVICE WAS PROVIDED
BANGLADESH	To achieve the global goal of elimination of dog-mediated human rabies by 2030, an important component to focus on is the surveillance of animal rabies to provide accurate data in countries for timely and appropriate control measures. Although rabies poses significant public health concerns in	Virtual Workshop on Proposed South Asia Rabies Lablab Network 14th July 2022

	South Asia, there is a general lack of ground-level surveillance owing primarily to insufficient or total lack of rabies diagnostic capacity across the region.	
BHUTAN	To achieve the global goal of elimination of dog-mediated human rabies by 2030, an important component to focus on is the surveillance of animal rabies to provide accurate data in countries for timely and appropriate control measures. Although rabies poses significant public health concerns in South Asia, there is a general lack of ground-level surveillance owing primarily to insufficient or total lack of rabies diagnostic capacity across the region.	Virtual Workshop on Proposed South Asia Rabies Lablab Network 14th July 2022
INDIA	To achieve the global goal of elimination of dog-mediated human rabies by 2030, an important component to focus on is the surveillance of animal rabies to provide accurate data in countries for timely and appropriate control measures. Although rabies poses significant public health concerns in South Asia, there is a general lack of ground-level surveillance owing primarily to insufficient or total lack of rabies diagnostic capacity across the region.	Virtual Workshop on Proposed South Asia Rabies Lablab Network 14th July 2022
NEPAL	To achieve the global goal of elimination of dog-mediated human rabies by 2030, an important component to focus on is the surveillance of animal rabies to provide accurate data in countries for timely and appropriate control measures. Although rabies poses significant public health concerns in South Asia, there is a general lack of ground-level surveillance owing primarily to insufficient or total lack of rabies diagnostic capacity across the region.	Virtual Workshop on Proposed South Asia Rabies Lablab Network 14th July 2022
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	The World Organisation for Animal Health (WOAH, founded as OIE), Regional Representation for Asia and the Pacific (RRAP), Japan, jointly with WOAH Reference Laboratory for Rabies based at Karnataka Veterinary Animal and Fisheries Sciences University (KVAFSU), Bengaluru India and Mission Rabies, organised the Regional Training of Trainers Workshop on Mass Dog Vaccination (MDV) at Veterinary College, Hebbal, Bengaluru, India from 28 November to 2 December 2022. Twenty-four government officials working on rabies control from Bangladesh, Bhutan, Cambodia, India, Indonesia, Myanmar, Nepal, Philippines, Thailand, Sri Lanka were trained on concepts, tools, and strategies on MDV, oral rabies vaccination, dog population management (DPM), rabies diagnosis and surveillance. Besides theory, participants were trained on practical use of the WVS MDV App which is a useful tool for implementation and monitoring of MDV and DPM. Participants were	

BANGLADESH	<p>also showed practical demonstration of how oral rabies vaccine (ORV) baits are delivered using the hand-out and retrieve method which is WOAHA recommended delivery of oral rabies vaccines. For the demonstration, only baits containing water in blister packing were used instead of oral rabies vaccines. Participants also received hands-on training on the occipital foramen method of brain sampling, which is a simple, non-invasive method recommended by WOAHA. Participants visited the WOAHA Reference Laboratory for Rabies at the Veterinary College and had first-hand demonstration of rabies diagnostic tests used such as the lateral flow assay, direct fluorescent antibody test (DFA) and the direct rapid immunohistochemistry test (DRIT). The participants made field visits to see the implementation of dog population management and MDV activities undertaken by the Bengaluru Municipal Authority (BBMP) and visited one of the animal birth control centres. With this training, it is expected that the trainees would have gained knowledge on the principles, concepts, tools, strategies available for planning, implementation and monitoring of MDV, ORV, and DPM. It is expected that these cohort of trainees would transfer their knowledge and skills to their staff working on rabies control once they resume their work in their countries.</p>	Regional Training of Trainers workshop on Mass Dog Vaccination 28th November to 2nd December, 2022
	The World Organisation for Animal Health (WOAH, founded as OIE), Regional Representation for Asia and the Pacific (RRAP), Japan, jointly with WOAHA Reference Laboratory for Rabies based at Karnataka Veterinary Animal and Fisheries Sciences University (KVAFSU), Bengaluru India and Mission Rabies, organised the Regional Training of Trainers Workshop on Mass Dog Vaccination	

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	<p>monitoring of MDV, ORV, and DPM. It is expected that these cohort of trainees would transfer their knowledge and skills to their staff working on rabies control once they resume their work in their countries.</p>	
CAMBODIA	<p>The World Organisation for Animal Health (WOAH, founded as OIE), Regional Representation for Asia and the Pacific (RRAP), Japan, jointly with WOAH Reference Laboratory for Rabies based at Karnataka Veterinary Animal and Fisheries Sciences University (KVAFSU), Bengaluru India and Mission Rabies, organised the Regional Training of Trainers Workshop on Mass Dog Vaccination (MDV) at Veterinary College, Hebbal, Bengaluru, India from 28 November to 2 December 2022. Twenty-four government officials working on rabies control from Bangladesh, Bhutan, Cambodia, India, Indonesia, Myanmar, Nepal, Philippines, Thailand, Sri Lanka were trained on concepts, tools, and strategies on MDV, oral rabies vaccination, dog population management (DPM), rabies diagnosis and surveillance. Besides theory, participants were trained on practical use of the WVS MDV App which is a useful tool for implementation and monitoring of MDV and DPM. Participants were also showed practical demonstration of how oral rabies vaccine (ORV) baits are delivered using the hand-out and retrieve method which is WOAH recommended delivery of oral rabies vaccines. For the demonstration, only baits containing water in blister packing were used instead of oral rabies vaccines. Participants also received hands-on training on the occipital foramen method of brain sampling, which is a simple, non-invasive method recommended by WOAH. Participants visited the WOAH Reference Laboratory for Rabies at</p>	<p>Regional Training of Trainers workshop on Mass Dog Vaccination 28th November to 2nd December, 2022</p>

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PHILIPPINES

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THAILAND

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Regional Training of Trainers workshop on Mass Dog Vaccination 28th November to 2nd December, 2022

TOR5: COLLABORATIVE SCIENTIFIC AND TECHNICAL STUDIES

12. Did your laboratory participate in international scientific studies in collaboration with WOAHA Members other than the own?

No

TOR6: EPIZOOLOGICAL DATA

14. Did your Laboratory collect epidemiological data relevant to international disease control?

Yes

IF THE ANSWER IS YES, PLEASE PROVIDE DETAILS OF THE DATA COLLECTED:

In this Laboratory, for detection of Rabies virus from brain samples of various animals (dog, cattle, cat, goat, Jackel, Wolf, Bat, Lion, Monkey, and Squirrel) anti-N protein rabies monoclonal antibody based DFA and dRIT are being routinely employed. During Jan-DEC, 2022, 298 brain samples of different species of animals from various states of India were tested by DFA for rabies viral inclusions. Of these, 194 were found to be positive. Serum samples (392) were tested by RFFIT to assess anti rabies vaccinal antibody titre. This was done majorly for international movement of pets.

15. Did your laboratory disseminate epidemiological data that had been processed and analysed?

Yes

IF THE ANSWER IS YES, PLEASE PROVIDE DETAILS OF THE DATA COLLECTED:

The details of the data has been submitted to Department of Animal Husbandry and Dairying (DAHD) and National Center for Disease Control (NCDC), Govt. of India.

16. What method of dissemination of information is most often used by your laboratory? (Indicate in the appropriate box the number by category and list the details in the box)

a) Articles published in peer-reviewed journals:

3

1. KavithaGovindaiah, DilipLakshman, Isloor Shrikrishna, RathnammaDoddamane, SharadaRamakrishnaiah, Narayanaswamy H Doddappaiah, Byregowda S Munivenkatappa, Venkatesha M Dasappa Gupta, GyanendraGongal, Avinash S Bhat, Hridya S Varughese, TilakChandan, Shivakumar and Vinay C Prakash Rao. 2022. "Comparative evaluation of lateral flow assay with direct fluorescent antibody assay for surveillance of rabies in animals in India" *The Pharma Innovation Journal* 2022; SP- 11(2): 883-887

2. Gowri Yale, Marwin Lopes, Shrikrishna Isloor, Jennifer R. Head, Stella Mazeri, Luke Gamble, KinzangDukpa, GyanendraGongal and Andrew D. Gibson. "Review of Oral Rabies Vaccination of Dogs and Its Application in India". *Viruses* 2022, 14, 155. <https://doi.org/10.3390/v14010155>

3. Lekshmi J. Das, Shrikrishna Isloor, AlurKotrappa Santhosh, Avinash Bhat, RamakrishnaiahSharada, DoddamaneRathnamma, BelamaranahallyMuniveerappaVeeregowda, KonanduruLingappaPhaniraj, Nageshkumar Abhijit Kumar and Abi T. Vanak. Comparative evaluation of the estimation of rabies virus antibodies among free-roaming, vaccinated dogs in Bengaluru, India. *Viruses*, February, 2022, 14: 484.

b) International conferences:

0

c) National conferences:

1

1.Dilip Lakshman, Kavitha Govindaiah , Sharada Ramakrishnaiah, Balaji Chandrashekar, Manjunath Shinde, Gowri Yale and Shrikrishna Isloor. Presented a Oral presentation on 'Assessment of anti rabies vaccinal antibody response in free roaming dogs in Bengaluru, India: A controlled, pilot study" in APRICON on 17th & 18th September, 2022

d) Other (Provide website address or link to appropriate information):

0

TOR7: SCIENTIFIC AND TECHNICAL TRAINING

17. Did your laboratory provide scientific and technical training to laboratory personnel from other WOA H Members?

Yes

a) Technical visit : 0

b) Seminars :

c) Hands-on training courses: 210

d) Internships (>1 month)

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	India	197
c	Bangladesh	2
c	Bhutan	2
c	Cambodia	1
c	Indonesia	1
c	Mynamar	1
C	Nepal	2
c	Philippines	1
c	Srilanka	2
c	Thailand	1

TOR8: QUALITY ASSURANCE

18. Does your laboratory have a Quality Management System?

Yes

Quality management system adopted	Certificate scan (PDF, JPG, PNG format)	
SO/IEC 17025:2017	QAI Certificate of Accreditation	Certificate Renewal Laboratory RABIES, Bengaluru.pdf
SO/IEC 17025:2017	QAI Scope of accreditation	Renewal Scope Laboratory - RABIES, Bengaluru.pdf

19. Is your quality management system accredited?

Yes

Test for which your laboratory is accredited	Accreditation body
Direct Fluorescent Antibody assay	Quality and Accreditation Institute, Centre for Laboratory Accreditation
Rapid Fluorescent Focus Inhibition Test	Quality and Accreditation Institute, Centre for Laboratory Accreditation
Polymerase Chain Reaction	Quality and Accreditation Institute, Centre for Laboratory Accreditation

20. Does your laboratory maintain a "biorisk management system" for the pathogen and the disease concerned?

Yes

TOR9: SCIENTIFIC MEETINGS

21. Did your laboratory organise scientific meetings related to the pathogen in question on behalf of WOA?

Yes

NATIONAL/ INTERNATIONAL	TITLE OF EVENT	CO-ORGANISER	DATE (MM/YY)	LOCATION	NO. PARTICIPANTS
International	Virtual Workshop on Proposed South Asia Rabies Lablab Network	World Organisation for Animal Health (WOAH, founded as OIE), Regional Representation for Asia and the Pacific (RRAP), Japan	2022-07-14	Online	36
International	Regional Training of Trainers workshop on Mass Dog Vaccination	1.World Organisation for Animal Health (WOAH, founded as OIE), Regional Representation for Asia and the Pacific (RRAP), Japan.2.Mission Rabies,	2022-11-28	Bengaluru	24
National	Collection of brain sample and laboratory diagnosis of Rabies in Animals	NCDC, Govt of India	2022-02-17	Online	
National	Hands on training on "Collection of brain sample and laboratory diagnosis of Rabies in Animals"	NCDC, Govt of India	2022-03-16	Bengaluru	12
National	Brain sample collection, packing, transportation and diagnosis of rabies in animals'	Veterinary college, Hassan, and CVA	2022-03-23	Hassan	30
	Training on "				

National	Collection of brain sample and Diagnosis of Rabies in animals	KVC and Dept. pf AH and VS. GoK	2022-08-28	Bangaluru	20
National	Training on " Collection of brain sample and Diagnosis of Rabies in animals	KVC and Dept. pf AH and VS. GoK	2022-09-02	Hassan	28
National	Training on " Collection of brain sample and Diagnosis of Rabies in animals	KVC and Dept. pf AH and VS. GoK	2022-09-13	Bidar	45
National	Training on " Collection of brain sample and Diagnosis of Rabies in animals	KVC and Dept. pf AH and VS. GoK	2022-09-21	Gadag	53

22. Did your laboratory participate in scientific meetings related to the pathogen in question on behalf of WOA?

Yes

Title of event	Date (mm/yy)	Location	Role (speaker, presenting poster, short communications)	Title of the work presented
Towards harmonization of rabies diagnosis and control updates	2022-01-05	AH&VS, Bengaluru	Speaker	Towards harmonization of rabies diagnosis and control updates
OIE Virtual Workshop on Oral Rabies Vaccines (ORVs)	2022-02-28	Online	Participant	The webinar is expected to contribute to the following objectives: ✓ Enhance awareness on oral rabies vaccination principles, concepts, use in wildlife, and potential use in dogs for rabies elimination. ✓ Share country experiences in successful piloting of ORV baits and ORVs in dogs. ✓ Create a platform for communication between countries and the OIE/ experts/ vaccine manufacturers for those interested to pursue piloting ORVs in dogs. ✓ Discuss key issues and gaps hindering uptake of ORVs in the region that could be addressed through regional or country-specific interventions

				collaboratively with partners, experts, vaccine manufacturers, and/or other stakeholders.
National Workshop, APCRI, Nagpur, Maharashtra	2022-03-27	Nagpur, MH	Speaker	Rabies Immunoglobulin 'rabies monoclonal antibodies administration in Humans' and 'post exposure prophylaxis against rabies in animals & oral vaccination in dogs
Orientation and launch of One Health Pilot in Karnataka	2022-06-27	ICAR-NIANP, Bengaluru	Participant	Orientation and launch of One Health Pilot in Karnataka
RABLAB meeting	2022-01-26	Online	Participant	The main topic of the meeting was the OIE reference serum of dog origin that is being produced by the OIE Reference Laboratory in Nancy
RABLAB meeting	2022-03-02	Online	Participant	1.Update on talks with IAEA on the serum standard. 2.Update on the LFD discussion with Bionote (Anigen) regarding OIE endorsement 3. Potential avenues - proposal for including LFDs into the Terrestrial Manual. 4.Discussion on roles and responsibilities in case of failure of reported vaccine failures
RABLAB meeting	2022-05-28	Online	Participant	
RABLAB meeting	2022-10-11	online	Participant	

TOR10: NETWORK WITH WOAHP REFERENCE LABORATORIES

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

Yes

24. Are you a member of a network of WOAHP Reference Laboratories designated for the same pathogen?

Yes

PURPOSE OF THE PROFICIENCY TESTS: 1	ROLE OF YOUR REFERENCE LABORATORY (ORGANISER/ PARTICIPANT)	NO. PARTICIPANTS	PARTICIPATING WOAHP REF. LABS/ ORGANISING WOAHP REF. LAB.
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25. Did you organise or participate in inter-laboratory proficiency tests with WOAHP Reference Laboratories designated for the same

pathogen?

No

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

No

TOR11: OTHER INTERLABORATORY PROFICIENCY TESTING

27. Did your laboratory organise or participate in inter-laboratory proficiency tests with laboratories other than WOA Reference Laboratories for the same pathogen?

Yes

Purpose for inter-laboratory test comparisons ¹	Role of your reference laboratory (organizer/participant)	No. participating laboratories	Region(s) of participating WOA Member Countries
1.dRIT developed with biotinylated mabs	Participant		Asia and Pacific
DFA developed with FITC Conjugated Mabs	Participant		Asia and Pacific

TOR12: EXPERT CONSULTANTS

28. Did your laboratory place expert consultants at the disposal of WOA?

Yes

KIND OF CONSULTANCY	Location	SUBJECT (FACULTATIVE)
Hands on Training, Bengaluru Date: 16-19 March 2022	Bengaluru, India	Hands on training on collection of Brain sample and Laboratory diagnosis of Rabies
Continued Veterinary Education Programme, Bengaluru Date 23.08.2022	India	Hands on training on collection of Brain sample and Laboratory diagnosis of Rabies
Continued Veterinary Education Programme, Hassan Date 02.09.2022	India	Brain sample and Laboratory diagnosis of Rabies
Continued Veterinary Education Programme, Bidar Date 13.09.2022	India	Brain sample and Laboratory diagnosis of Rabies
Continued Veterinary Education Programme, Gadag Date 13.09.2022	India	Brain sample and Laboratory diagnosis of Rabies
Workshop	Bangladesh	Regional training of trainers workshop on Mass dog vaccination
Workshop	Bhutan	Regional training of trainers workshop on Mass dog vaccination
Workshop	Cambodia	Regional training of trainers workshop on Mass dog vaccination
Workshop	India	Regional training of trainers workshop on Mass dog vaccination
Workshop	Indonesia	Regional training of trainers workshop on Mass dog vaccination

Workshop	Myanmar	Regional training of trainers workshop on Mass dog vaccination
Workshop	Nepal	Regional training of trainers workshop on Mass dog vaccination
Workshop	Philippines	Regional training of trainers workshop on Mass dog vaccination
Workshop	Sri Lanka	Regional training of trainers workshop on Mass dog vaccination
Workshop	Thailand	Regional training of trainers workshop on Mass dog vaccination

29. Additional comments regarding your report:

Yes

The details of activities carried out at this laboratory are already provided in the report. Further the laboratory supporting post graduate and doctoral thesis programs on Rabies. Provided scientific inputs and technical expertise in preparing dossier for " National Action Plan For Rabies Elimination" (NAPRE).