WOAH Reference Laboratory Reports Activities 2023

Activities in 2023

This report has been submitted : 6 juin 2024 07:45

Laboratory Information

Name of disease (or topic) for which you are a designated WOAH Reference Laboratory:	Rabies
Address of laboratory:	KVAFSU-CVA Rabies Diagnostic Laboratory, Department of Veterinary Microbiology, Veterinary College, Karnataka Veterinary, Animal and Fisheries Sciences University (KVAFSU), Hebbal, Bengaluru- 560024, INDIA
Tel.:	+91-80 29.53.22.87
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 Veterinary Microbiology, Veterinary College, Karnataka Veterinary, Animal and Fisheries Sciences University (KVAFSU) Hebbal, Bengaluru 560024, INDIA
Name (including Title and Position) of WOAH Reference Expert:	Dr. Shrikrishna Isloor, Laboratory Director & Professor, KVAFSU-CVA Rabies Diagnostic Laboratory. Department of Veterinary 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 WOAH Manual (Yes/No)	Total number of test performed last year	
Indirect diagnostic tests		Nationally	Internationally
Immnochromatography (LFA)		168	0
Direct diagnostic tests		Nationally	Internationally
Direct Fluorescent Antibody (DFA)		337	0
Rapid Fluorescent Focus inhibition Test (RFFIT)		491	0
PCR		129	41

TOR2: REFERENCE MATERIAL

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

No

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

No

4. Did your laboratory produce vaccines?

No

5. Did your laboratory supply vaccines to WOAH 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 WOAH 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 WOAH Standards for the designated pathogen or disease?

No

TOR4: DIAGNOSTIC TESTING FACILITIES

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

Yes

NAME OF WOAH MEMBER COUNTRY SEEKING ASSISTANCE	DATE	WHICH DIAGNOSTIC TEST USED	NO. SAMPLES RECEIVED FOR PROVISION OF DIAGNOSTIC SUPPORT	NO. SAMPLES RECEIVED FOR PROVISION OF CONFIRMATORY DIAGNOSES
SRI LANKA	2023-03-16	PCR	41	41

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

Yes

NAME OF THE WOAH 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 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.	WOAH Sub-Regional Training Workshop on Animal Rabies Diagnosis for South Asia. 18 th -21 st January, 2023
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	WOAH Sub-Regional Training Workshop on Animal Rabies Diagnosis for South Asia. 18 th -21 st January, 2023
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	WOAH Sub-Regional Training Workshop on Animal Rabies Diagnosis

	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	for South Asia. 18 th -21 st January, 2023
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	WOAH Sub-Regional Training Workshop on Animal Rabies Diagnosis for South Asia. 18 th -21 st January, 2023
SRI LANKA	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	WOAH Sub-Regional Training Workshop on Animal Rabies Diagnosis for South Asia. 18 th -21 st January, 2023
ZAMBIA	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	WOAH Sub-Regional Training Workshop on Animal Rabies Diagnosis for South Asia. 18 th -21 st January, 2023
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	Training on “Collection of brain samples and diagnosis of Rabies”.1 st -3 rd March, 2023
	To achieve the global goal of elimination of dog-mediated human rabies by 2030, an important	

GHANA	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	Training on “Collection of brain samples and diagnosis of Rabies”. 19 th - 22 nd December, 2023
KENYA	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	Training on “Collection of brain samples and diagnosis of Rabies”. 19 th - 22 nd December, 2023
RWANDA	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	Training on “Collection of brain samples and diagnosis of Rabies”. 19 th - 22 nd December, 2023
SRI LANKA	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	“Collection of brain samples and diagnosis of Rabies”. 19 th - 22 nd Training on “Collection of brain samples and diagnosis of Rabies”. 19 th - 22 nd December, 2023
TIMOR-LESTE	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	Training on “Collection of brain samples and diagnosis of Rabies”. 19 th - 22 nd December, 2023

	region	

TOR5: COLLABORATIVE SCIENTIFIC AND TECHNICAL STUDIES

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

No

13. In exercising your activities, have you identified any regulatory research needs* relevant for WOAH?

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, Monkey, Buffalo, Horse, Mice, Sheep, Pig and Squirrel) anti-N protein rabies monoclonal antibody based DFA and dRIT are being routinely employed. During Jan-DEC, 2023, 337 brain samples of different species of animals from various states of India were tested by DFA for rabies viral inclusions. Of these, 233 were found to be positive. Serum samples (491) 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), Ministry of Fisheries, Animal Husbandry & Dairying, Govt. of India and National Center for Disease Control (NCDC), Ministry of Health & Family Welfare, 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:

4

1. Vinay C.P, Sharada R, S.Isloor, Rathnamma D,Dilip L, Manjunath Shinde, Avinash Bhat , Balaji Chandrashekar, Krithiga N, Ganesh K and Nagendra R. Hegde. Assessment of immune responses to rabies vaccination in free-ranging dogs in Bengaluru, India. Vaccines, April, 2023, 11, 888

2. Hridya Susan Varughese, Chethana Chandrahasa, Kavitha GM, Akhila DS, Shreya Gopinath, Kavitha Govindaiah, Tilak Chandan S, Vinay C Prakash Rao, Madhusudhan Hosamani, Sharada Ramakrishnaiah, Rathnamma Doddamane, Divakar Hemadri and Shrikrishna Isloor (2023). Development of recombinant partial nucleoprotein of rabies virus as the potential antigen for developing in house immunodiagnostics. The Pharma Innovation Journal, 2023; 12(1): 516-519.

3. Krithiga Natesan, Shrikrishna Isloor , Balamurugan Vinayagamurthy, Sharada Ramakrishnaiah, Rathnamma Doddamane and Anthony R. Fooks (2023). Developments in Rabies Vaccines: The Path Traversed from Pasteur to the Modern Era of Immunization. Vaccines, March, 2023, 11, 756. https://doi.org/10.3390/vaccines11040756.

4. Swathi Gopalaiah, Kshama M. Appaiah, S. Isloor, Dilip Lakshman, R. P. Thimmaiah, Suguna Rao, Mahadevappa D. Gouri, Naveen Kumar, Kavitha Govindaiah, A. Bhat, S. Tiwari. Comparative Evaluation of Intradermal vis-à-vis Intramuscular Pre-Exposure Prophylactic Vaccination against Rabies in Cattle.Vaccines, April, 2023.11(5): 885.

b) International conferences:

c) National conferences:

3

In :23rd National Conference of Association for Prevention and Control of Rabies in India-APCRICON 2023 on :One Health: Communication, Coordination and

Collaboration for rabies free India" held on 8th& 9th July, 2023 organized by RMLIMS, Lucknow, Uttar Pradesh.

1. Kavitha G, ShrkrishnaIsloor, D. Rathnamma, H.D. Narayanaswamy, S.M. Byregowda, M.D.Venkatesha (2023). 'Development of field and laboratory based immunodiagnostic assays for rabies in animals'. (Kavitha G. Ph.D Scholar of this department awarded "Young scientist award")

2. A.K.Santhosh, S.Isloor, R.Sharada, D.Rathnamma, L.Dilip, N.Krithiga, Deepak Kumar, NagendraR.Hegde, CharapreetKaur, V.Balamurugan, AvinashBhat and S.Y.Mukartal (2023). Development of a baculovirus-expressed rabies virus glycoprotein based indirect ELISA for estimation of antirabies antibodies in vaccinated dogs. Pp 31-32.

3. Tilak Chandan S, S.Isloor, R.Sharada, D.Rathnamma, Hridya S.V., Krithiga N, D.Hemadri, Kavitha G, Anada K.J. and Manjunath K.P(2023).'Nucleoprotein and glycoprotein in gene based molecular characterization of rabies virus in different species of animals in India.Pp 32-33.

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

TOR7: SCIENTIFIC AND TECHNICAL TRAINING

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

Yes

a) Technical visit : 0

b) Seminars : 0

c) Hands-on training courses: 3

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	INDIA	16
C	BHUTAN	2
C	BANGLADESH	2
C	NEPAL	2
C	SRI LANKA	2
C	GHANA	1
C	KENYA	1
C	TIMOR-LESTE	1
C	TANZANIA	1
C	RWANDA	1

TOR8: QUALITY ASSURANCE

18. Does your laboratory have a Quality Management System?

Yes

Quality management system adopted	Certificate scan (PDF, JPG, PNG format)	
ISO/IEC 17025:2017	QAI Certificate of Accreditation	Certificate-KVAFSU-CVA Rabies Diagnostic Laboratory, Bengaluru.pdf
ISO/IEC 17025:2017	QAI Scope of accreditation	Scope-KVAFSU-CVA Rabies Diagnostic Laboratory, 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 WOAH?

Yes

NATIONAL/ INTERNATIONAL	TITLE OF EVENT	CO-ORGANISER	DATE (MM/YY)	LOCATION	NO. PARTICIPANTS
International	WOAH Sub-Regional Training Workshop on Animal Rabies Diagnosis for South Asia	WOAH Regional Representation for Asia and the Pacific, Tokyo, Japan,	2023-01-18	KVAFSU-CVA Rabies Diagnostic Laboratory, Veterinary college, Bengaluru, India	15
National	"Collection of brain samples and diagnosis of Rabies"	National Center for Disease Control, Govt. of India.	2023-03-01	KVAFSU-CVA Rabies Diagnostic Laboratory, Veterinary college, Bengaluru, India	10
International	"Collection of brain samples and diagnosis of Rabies"	Commonwealth Veterinary Associatin	2023-12-19	KVAFSU-CVA Rabies Diagnostic Laboratory, Veterinary college, Bengaluru, India	10

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

Yes

Title of event	Date (mm/yy)	Location	Role (speaker, presenting poster, short communications)	Title of the work presented
First Meeting of South Asia Rabies Lab Network (SA_RABNET) ; Introduction of Rabies laboratory network for south Asia- A concept'	2023-04-06	Virtual WOAH-RRAP, Japan	SPEAKER Dr. Shrikrishna Isloor Dr. Sharada, R,	Role of rabies regional reference laboratory (KVAFSU) for regional synergies'
Recent research and Innovations in Life Science, 2023'	2023-06-27	Mysore, Karnataka, India	SPEAKER Dr. Shrikrishna Isloor	Rabies
Preconference workshop in 23rd National Conference of Association for Prevention and Control of Rabies in India-APCRICON 2023	2023-09-07	Ram Manohar Lohiya Institute of Medical Sciences (RMLIMS) Lucknow, UP	SPEAKER Dr. Shrikrishna Isloor Dr. D. Rathnamma Dr.Sharada, R	'Demonstration and hands on training on Brain sample collection, preparation of impression and rapid screening test for diagnosis of rabies' 'Continuation of processing for DFA &dRIT and gel electrophoresis of PCR product 7th July, 2023
Global Webinar " A global expose on wildlife rabies"	2023-10-25	Virtual	SPEAKER Dr. Shrikrishna Isloor	'Rabies in wildlife in India: A lesser known emerging challenge'
11th FASAVA Congress for Pet Practitioner Association of Mumbai under the AEGIS of FASAVA	2023-10-29	Mumbai, India	SPEAKER Dr. Shrikrishna Isloor	1) Rabies-A zoonotic threat in South Asia; 2) Capacity building in South Asia for elimination of dog mediated rabies by 2030-
33rd Conference of the Regional Commission for Asia and the Pacific	2023-11-14	New Delhi, India	SPEAKER Dr. Shrikrishna Isloor	Rabies-A zoonotic threat in South Asia;
33rd Conference of the Regional Commission for Asia and the Pacific	2023-11-15	New Delhi, India	SPEAKER Dr. Shrikrishna Isloor	Success of OIE Twinning Programme& Panel & Panel discussion
Multistake holder consultation Meeting	2023-11-21	Bhubaneswar, Orissa, India	SPEAKER Dr. Shrikrishna Isloor	State Action Plan for the Prevention and Control of Zoonotic Diseases for the state of Orissa

South Asia Rabies Laboratory Network (SA-RABNET)	2023-11-23	Virtual Virtual WOAH-RRAP, Japan	SPEAKER Dr. Shrikrishna Isloor Dr. Sharada, R,	'Phylogeny of the rabies viruses circulating in wild and domestic animals in Sri Lanka and its implications on rabies control'
Webinar NCDC_NAZ_2023Veterinarians and Zoonosis'	2023-11-24	Virtual, Haftkine Institute for training, research and testing, Parel, Mumbai, India	SPEAKER Dr. Shrikrishna Isloor	Exploring the intersection of Zoonosis and Biosafety'
Collaboration with the consortium against rabies-CARCON 2023	2023-12-08	University, School of Public Health, Navi Mumbai, India	SPEAKER Dr. Shrikrishna Isloor	'Harnessing technology and data for effective rabies surveillance and management'
XXVIII Annual convention of ISVIB and National conference on Advanced concepts, strategies in immune-biotechnology for disease diagnosis and control	2023-12-12	SLD Laboratory, SVVU, Tirupati , AP, India	SPEAKER Dr. Shrikrishna Isloor	'The concept of one health approach to prioritize rabies in India'

TOR10: NETWORK WITH WOAH REFERENCE LABORATORIES

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

Yes

24. Do you network (collaborate or share information) with other WOAH Reference Laboratories designated for the same pathogen?

Yes

NETWORK/DISEASE	ROLE OF YOUR LABORATORY (PARTICIPANT, ORGANISER, ETC)	NO. PARTICIPANTS	PARTICIPATING WOAH REF. LABS
RABLAB/Rabies	Parcipant	2	11

25. Did you organise or participate in inter-laboratory proficiency tests with WOAH Reference Laboratories designated for the same pathogen?

No

26. Did your laboratory collaborate with other WOAH 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 WOAH Reference Laboratories for the same pathogen?

Yes

Purpose for inter-laboratory test comparisons1	Role of your reference laboratory (organizer/participant)	No. participating laboratories	Name of the Test	WOAH Member Countries
Rabies Diagnosis	Participant	2	DFA	INDIA,
Rabies Diagnosis	Participant	2	PCR	INDIA,
Rabies serology	Participant	1	RFFIT	INDIA,

TOR12: EXPERT CONSULTANTS

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

Yes

KIND OF CONSULTANCY	Location	SUBJECT (FACULTATIVE)
Hands on Training and virtually	Veterinary College, Hebbal	Rabies Diagnosis

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 dosier for " National Action Plan For Rabies Elimination" (NAPRE).