WOAH Collaborative Centre Reports Activities 2023

Activities in 2023

This report has been submitted : 6 juin 2024 08:13

Centre Information

Title of WOAH Collaborating Centre	Diagnosis and Control of animal diseases and related veterinary product assessment in Asia
Address of WOAH Collaborating Centre	(1)National Veterinary Assay Laboratory, 1-15-1 Tokura Kokubunji Tokyo 185-8511, JAPAN (2)National Institute of Animal Health, NARO 3-1-5 Kannondai Tsukuba Ibaraki 305-0856, JAPAN
Tel.:	(1)NVAL:+81423211841 (2)NIAH:+81298387713
E-mail address:	(1)nval_oiecc@maff.go.jp (2)kawaken@affrc.go.jp, tyanase@affrc.go.jp
Website:	(1)http://www.maff.go.jp/nval/english/index.html (2)http:www.naro.affrc.go.jp/english/laboratory/niah/index.html
Name Director of Institute (Responsible Official):	(1)National Veterinary Assay Laboratory: Dr. SHIMAZAKI Tomoaki (2)National Institute of Animal Health, NARO:Dr. KATSUTA Ken
Name (including Title and Position) of Head of the Collaborating Centre (WOAH Contact Point):	Dr. KAWASHIMA Kenji. Director, Department of Research Promotion, National Institute of Animal Health, NARO
Name of the writer:	(1)NVAL: Dr. OCHIAI Mariko (2)NIAH.NARO: Dr.YANASE Tohru

TOR1 AND 2: SERVICES PROVIDED

1. Activities as a centre of research, expertise, standardisation and dissemination of techniques within the remit of the mandate given by WOAH

Category	Title of activity	Scope
Epidemiology, surveillance, risk assessment, (true)	Meeting of the WOAH Biological Standards Commission, Paris, 6-10th February, 2023	Dr. KAWAJI Satoko participated as an expert of a member of OIE Biological Standards Commission.
Veterinary medicinal products (true)	Regional Short-term Online Training on Antimicrobial Resistance (Japan, from 28th	This training consisted of one-day webinar on 28th February and e-mail-based discussion for 2 weeks until 14th March. In terms of the webinar, we had 41 participants from 15 countries or regions, and total 37 trainees took a whole term of this training. Objectives of this training were • to provide follow-ups for the past AMR training held by NVAL. • to enhance the engagement in regional AMR activity. • to maintain/ strengthen the network among the previous participants in the AMR Laboratory Trainings provided by NVAL. Dr. KUGITA Hirofumi, regional representative of WOAH and Dr. SHIMAZAKI Tomoaki , director general of NVAL gave us opening remarks and Dr. IEDA Nahoko from WOAH introduced RRAP activities. Dr. KAWANISHI

	February to 14th March, 2023)	Michiko, Dr. KUMAKAWA Mio, Dr. MATSUDA Mari gave presentations about NVAL's updated techniques, provisional break points and monitoring in companion animals. Assoc. Prof. Dr. USUI Masaru from Rakuno Gakuen University (WOAH collaborating Center for Food Safety) was a special lecture guest. Dr. HIRAOKA Yukari had shared results of the questionnaire. Trainee from Nepal, Hong Kong (SAR-PRC), Myanmar, Thailand, Sri Lanka, Republic of Korea and Viet Nam had introduced their national action plan, AMR monitoring results, challenges, future plans etc. in their presentation. There were active exchange of opinions and information via live chat box and oral.
Veterinary medicinal products (true)	13th Meeting of OIE AMU Database Technical Reference Group (TRG) 15th February, 2023	Dr. MATSUDA Mari participated as a member of TRG.
Veterinary medicinal products (true)	Tokyo AMR One-Health Conference 17th February, 2023	Dr. KAWANISHI Michiko and Dr. HIRAOKA Yukari participated as an expert of AMR.
Veterinary medicinal products (true)	Regional ANIMUSE Training for WOAH Focal Points for Veterinary Products 22-24th February, 2023, Bangkok, Thailand	Dr. MATSUDA Mari participated as a guest speaker.
Veterinary medicinal products (true)	The Asia Pacific Quadripartite (FAO, UNEP, WHO, and WOAH) organized 1st Asia Pacific Quadripartite One Health Workshop from 5-8th September, 2023 in Bangkok, Thailand.	Dr. SEKIYA Tatsuro participated as an expert.
Veterinary medicinal products (true)	3rd MFDS Global Conference on Foodborne Antimicrobial Resistance, 12-13th September, 2023	Dr. KAWANISHI Michiko and Dr. HIRAOKA Yukari participated as an expert of AMR.
Veterinary medicinal products (true)	Regional Short-term Training on Antimicrobial Resistance (Basic Course) At NVAL, Tokyo, Japan On 27-30th November, 2023	This training was held at the National Veterinary Assay laboratory, aiming the transferring the basic knowledge and techniques of Antimicrobial Susceptibility tests to Asia-Pacific countries. The invitations were sent to Asia-Pacific countries' representatives. Three participants from Mongolia, Myanmar and Thailand joined this training. Dr. SHIMAZAKI Tomoaki, Dr. OCHIAI Mariko, Dr. OGURA Aki, Dr. SEKIYA Tatsuro, Dr. SEKIGUCHI Hideto, Dr. KAWANISHI Michiko, Dr. MATSUDA Mari, Dr. HIRAOKA Yukari, Dr. HARADA Saki, Dr. KUMAKAWA Mio, Dr. HOSOI Yuta, Dr. KOKUBUN Reiko, Dr. KOBAYASHI Yuka, and Dr. HOSODA Yuko were engaged in this training. Training contents: Broth microdilution method, Disk diffusion method, CBDE Method, PCR assay for the detection of antibiotic resistance genes (mecA and mcr genes), Agar dilution method, and MALDI TOF-MS. Presentation: Japanese Veterinary Antimicrobial Resistance Monitoring System, Methicillin-resistant Staphylococcus aureus (MRSA), trials for breakpoint setting.
Veterinary medicinal products (true)	Comment on the revision of WOAH Terrestrial Animal Health Standards (CHAPTER 6.10. RESPONSIBLE AND PRUDENT USE OF	Dr. SEKIYA Tatsuro, Dr. SEKIGUCHI Hideto, Dr. KAWANISHI Michiko, Dr. MATSUDA Mari, Dr. HIRAOKA Yukari, Dr. HARADA Saki, Dr. KUMAKAWA

	ANTIMICROBIAL AGENTS IN VETERINARY MEDICINE)	Mio, Dr. HOSOI Yuta commented on the draft.
Veterinary medicinal products (true)	Comment on the revision of WOAH Manual of Diagnostic Tests and Vaccines for Terrestrial Animals (Chapter 2.1.1. Laboratory methodologies for bacterial antimicrobial susceptibility testing)	Dr. KAWANISHI Michiko created the map for the revision of this chapter. Dr. SEKIYA Tatsuro, Dr. SEKIGUCHI Hideto, Dr. MATSUDA Mari, Dr ABO Hitoshi, Dr. HIRAOKA Yukari, Dr. HARADA Saki, Dr. KUMAKAWA Mio, and Dr. HOSOI Yuta supported this work.
Epidemiology, surveillance, risk assessment (true)	The 3rd Joint Meeting of Veterinary Science in East Asia, Pingtung, Taiwan, 1st - 3rd May, 2023	Dr. KOBAYAHSHI Sota participated as an expert of AMR. , Dr. KOKUHO Takehiro participated as an expert of African swine fever., Dr. SHIMOJI Yoshihiro participated as an expert of vaccine development.
Epidemiology, surveillance, risk assessment (true)	Meeting of the WOAH Biological Standards Commission, Paris, 4-8th September, 2023	Dr. KAWAJI Satoko participated as an expert of a member of OIE Biological Standards Commission.
Epidemiology, surveillance, risk assessment, (true)	The 2023 Global African Swine Fever Research Alliance (GARA) scientific meeting,Manila, Philippines, 5-7th December, 2023	Dr. MASUJIN Kentaro and Dr. KITAMURA Tomoya participated as an expert of African swine fever.
Epidemiology, surveillance, risk assessment (true)	The 5th Veterinary Technology & Nursing International Seminar, Bangkok, Thailand, 13-14th December, 2023	Dr. TAKAMATSU Daisuke participated as an expert of foul brood.

TOR3: HARMONISATION OF STANDARDS

2. Proposal or development of any procedure that will facilitate harmonisation of international regulations applicable to the main fucus area for which you were designated

Proposal title	Scope/Content	Applicable area
Revision of the VICH GLs concerning studies to evaluate the safety of residues of veterinary drugs in human food.	To revise the VICH GL23R (genotoxicity testing) To revise the VICH GL22 (reproduction studies)	Veterinary products
Development or revision of the VICH GLs concerning studies to evaluate the metabolism and residue kinetics of veterinary drugs in food-producing animals/species.	To revise the VICH GL49R (guidelines for the validation of analytical methods used in residue depletion studies)	Veterinary products
Development of VICH GLs concerning testing of biologicals.	To develop the new VICH GL (test on the presence of extraneous viruses in veterinary vaccines) To develop the new VICH GL (test on safety evaluation of biotechnology- derived/biological products) To develop the new VICH GL (transition to in vitro methods for batch potency tests in veterinary immunological)	Veterinary products
Development of VICH GL concerning quality testing of new drug substances.	To revise the VICH GL18R (guidelines for impurities: residual solvents in new veterinary medicinal products, active substances and excipients)	Veterinary products
Revisions of the VICH GLs concerning studies to evaluate the efficacy of anthelmintics	To revise the VICH GLs 7, 12 to 16 and 19 to 21.	Veterinary products

Development of VICH GL concerning combination products.	To develop the new VICH GL (General GL on Pharmaceutical Combination Products)	Veterinary products
Development of VICH GL concerning waiving on bioequivalence testing.	To develop the new VICH GL	Veterinary products
Development of VICH GL concerning stability on medicated premixes.	To develop the new VICH GL	Veterinary products
Development of VICH GL concerning quality on GMP for active pharmaceutical ingredients.	To develop the new VICH GL	Veterinary products
Development of VICH GL for pharmaceutical development.	To develop the new VICH GL	Veterinary products

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

No

4. Did your Collaborating Centre maintain a network with other WOAH Collaborating Centres (CC), Reference Laboratories (RL), or organisations designated for the same specialty, to coordinate scientific and technical studies?

Yes

Name of WOAH CC/RL/other organisation(s)	Location	Region of networking Centre	Purpose
National Institute of Infectious Diseases	Japan	Asia and Pasific	Development of One Health Surveillance
Animal Health Research Institute, Taiwan	Japan	Asia and Pasific	Exchange information about activities of WOAH Collaborating centre and WOAH Reference Laboratory.
National Institute of Veterinary Research (NIVR), Vietnam	Vietnam	Asia and Pasific	Collaborative research on surveillance, etiology, diagnosis, prevention, and control of viral infections of livestock importance in Vietnam
Polish National Veterinary Research Institute (PIWet-PIB)	Poland	Europe	Collaborative research on African swine fever, highly pathogenic avian influenza, and transmissible spongiform encephalopathy
Animal Health Research Institute Council of Agriculture (AHRI), Taiwan	Taiwan	Asia and Pasific	Collaborative research on surveillance, diagnosis and control of transboundary animal diseases including foot-and-mouth disease, African swine fever, swine fever, highly pathogenic avian

			influenza, and arbovirus infections
State Central Veterinary Laboratory, Mongolia	Mongolia	Asia and Pasific	Technological cooperation, information exchange, and interchange of researchers to promote research on transboundary animal diseases including foot-and-mouth disease and African swine fever
Animal and Plant Quarantine Agency of the Ministry of Agriculture, Food and Rural Affairs of the Republic of Korea (MAFRA) ("APQA")	Korea	Asia and Pasific	Development of the research cooperation in the field of avian influenza, foot-and-mouth disease, African swine fever and arbovirus infections
Friedrich-Loeffler-Institute (FLI), Germany	Germany	Europe	Exchange of information of epidemiology and etiology of highly pathogenic avian influenza in wild birds and poultry, and cooperative research on development and evaluation of diagnostic techniques
National Institute of Veterinary Research (NIVR), Vietnam	Vietnam	Asia and Pasific	Field tests of diagnostic tools for African swine fever and investigation of its prevalence in Vietnam

TOR4 AND 5: NETWORKING AND COLLABORATION

5. Did your Collaborating Centre maintain a network with other WOAH Collaborating Centres, Reference laboratories, or organisations in other disciplines, to coordinate scientific and technical studies?

Yes

Name of WOAH CC/RL/other organisation(s)	Location	Region of networking Centre	Purpose
Equine Research Institute, Japan Racing Association (RL)	Japan	Asia and Pasific	Cooperation for proficiency testing by interlaboratory comparison
Research center for food safety (University of Tokyo)	Japan	Asia and Pasific	To deepen the analysis of antimicrobial usage pattern in the field
Hokkaido University	Japan	Asia and Pasific	Cooperation for proficiency testing by interlaboratory comparison, and research on avian influenza and classical swine fever

TOR6: EXPERT CONSULTANTS

6. Did your Collaborating Centre place expert consultants at the disposal of WOAH?

Yes

NAME OF EXPERT	KIND OF CONSULTANCY	SUBJECT
Dr. NODA Ken (-March), Dr. IWAMOTO Shoko (April-), Dr. EGUCHI Kaoru	VICH Steering Committee	Member
Mr. OHMORI Junichi	VICH Steering Committee	Coordinator
Dr. SATO Kota	VICH Biologicals Expert Working Group	Chairperson
Dr. KIKUTANI Yuto	VICH Biologicals Expert Working Group	Member
Dr. KIDA Moeko	VICH Biologicals Expert Working Group	Advisor
Dr. OGATA Tomoko	VICH Quality Expert Working Group	Chairperson
Dr. TAKAHASHI Chikako(-June), Dr. HOSODA Yuko (July-), Dr. EGUCHI Kaoru,	VICH Quality Expert Working Group	Member
Dr. TANITA Natsumi(-March), Dr. ISHIKAWA Ryoko (-March), Mr. TAMURA Naoya (April-), Dr. AKIYAMA Kaoru (-November)	VICH Quality Expert Working Group	Advisor
Ms. IWASAKI Masako	VICH Bioequivalence Expert Working Group	Member
Dr. OGINO Tomoe	VICH Bioequivalence Expert Working Group	Advisor
Mr. KOIKE Ryoji	VICH Metabolism and Residue Kinetics Expert Working Group	Member
Dr. OZAWA Manao	VICH Safety Expert Working Group	Member
Dr. OGATA Tomoko	VICH Safety Expert Working Group	Advisor
Dr. OGURA Aki (-November), Dr.	VICH Expert Working Group for a General Guideline on	Member

EGUCHI Kaoru (November-)	Pharmaceutical Combination Products	
Dr. NODA Ken (-March), Dr. EGUCHI Kaoru (-November)	VICH Expert Working Group for a General Guideline on Pharmaceutical Combination Products	Advisor
Dr. OGINO Tomoe	VICH Anthelmintics Expert Working Group	Member
Mr. KOIKE Ryoji	VICH Anthelmintics Expert Working Group	Advisor
Dr. OGATA Tomoko	VICH Medicated premix Expert Working Group	Member
Ms. KANEHARA Mariko	VICH Pharmacovigilance Expert Working Group	Member
Dr. EGUCHI Kaoru, Mr. MIYAZAKI Teruki	VICH Pharmacovigilance Expert Working Group	Advisor
Dr. SEKIGUCHI Hideto, Dr. KAWANISHI Michiko, Dr. MATSUDA Mari, Dr. HOSOI Yuta, Dr. HIRAOKA Yukari, Dr. HARADA Saki, Dr. KUMAKAWA Mio	WOAH RRAP Experts on AMR monitoring	Member
Dr. KAWAJI Satoko	WOAH Biological Standards Commission	Member
Dr. YANASE Tohru	WOAH Regional Resource Persons about arthropod vectors surveillance and control	Member
Dr. KOKUHO Takehiro	FAO-WOAH Rinderpest Holding Facility, Category A	Contact Person
Dr. TAKAGI Michihiro	FAO-WOAH Rinderpest Holding Facility, Category B	Contact Person
Dr. IWAMARU Yoshifumi	WOAH Reference Laboratory, BSE	
Dr. FUKAI Katsuhiko	WOAH Reference Laboratory, CSF	
Dr. MINE Junki	WOAH Reference Laboratory, Swine Influenza	

Dr. KOKUHO Takehiro	WOAH Reference Laboratory, Rinderpest	

TOR7: SCIENTIFIC AND TECHNICAL TRAINING

7. Did your Collaborating Centre provide advice/services to requests from Members in your main focus area?

Yes

To China: We answered the question about international quality assurance test for antimicrobial susceptibility test.

To South Korea: We provided the information about assessment guideline for the Effect of Food on Human Health Regarding Antimicrobial-Resistant Bacteria Selected by Antimicrobial Use in Food-producing Animals.

To Taiwan: We gave opinions and advice to Dr. Zeng-Weng Chen who is the Director of Animal Technology Research Center, Agricultural Technology Research Institute, Taiwan to make a traditional Chinese version handbook for prudent use of Veterinary antimicrobial medicines for companion animals that based on JMAFF handbook in Japanese. (https://www.maff.go.jp/j/syouan/tikusui/yakuzi/attach/pdf/amr3pets-11.pdf) They have finished creating their handbook and released in Taiwan in 29th December, 2023. (https://www.aphia.gov.tw/ws.php?id=22850)

To South Korea: We gave information about Japanese veterinary vaccine approval system and National assay system.

To RRAP Staff: Responding to the request from WOAH RRAP staff related to WHO project in Indonesia, we provided advice and useful information on the use of praziquantel in cattle.

8. Did your Collaborating Centre provide scientific and technical training, within the remit of the mandate given by WOAH, to personnel from WOAH Members?

Yes

a) Technical visit : 0

b) Seminars : 0

c) Hands-on training courses: 0

d) Internships (>1 month) : 0

TYPE OF TECHNICAL TRAINING PROVIDED (A, B, C OR D)	CONTENT	COUNTRY OF ORIGIN OF THE EXPERT(S) PROVIDED WITH TRAINING	NO. PARTICIPANTS FROM THE CORRESPONDING COUNTRY
B	This training consisted of one-day webinar on 28 February and e-mail based discussion for 2 weeks until 14 March, 2023. ・Updating drug resistance monitoring knowledge and technology ・Reminders of past training content and materials ・Introduction of provisional breakpoints for animal pathogens ・Drug sensitivity test method for CL (Colistin Broth Disk Elution method) ・Monitoring scheme for pets ・Guidelines for antimicrobial treatment ・Drug resistance in the livestock environment ・Information and opinion exchange from each country ・Presentation of the status of monitoring in each country ・Create mailing lists to continuously share information and disseminate information	Japan	41
C	This training aimed the transferring the basic knowledge and techniques of Antimicrobial Susceptibility tests to Asia-Pacific countries. It was held at the National Veterinary Assay laboratory from 27th to 30th November, 2023. Training contents: Broth microdilution method, Disk diffusion method, CBDE Method, PCR assay for the detection of antibiotic resistance genes	Japan	3

	(mecA and mcr genes), Agar dilution method, and MALDI TOF-MS. Presentation: Japanese Veterinary Antimicrobial Resistance Monitoring System, Methicillin-resistant Staphylococcus aureus (MRSA), trials for breakpoint setting.		
A	Technical visits by 5 JICA trainees in Japan on 4th August, 2023. We gave the presentation about activities against antimicrobial resistance(AMR) in Japan and introduced our labs.	Japan	5
A	Technical visits by members from veterinary associations from 12 Asian countries on 15th September, 2023.	Japan	14
C	Training course titled as 'Improvement of basic technique of livestock disease diagnosis' (Japan International Cooperation Agency: JICA) from 27th June to 25th October,2023	Namibia, Paraguay, Philippines, Uzbekistan, Zambia	5

TOR8: SCIENTIFIC MEETINGS

9. Did your Collaborating Centre organise or participate in the organisation of scientific meetings related to your main focus area on behalf of WOAH?

Yes

NATIONAL/INTERNATIONAL	TITLE OF EVENT	CO-ORGANISER	DATE (MM/YY)	LOCATION	NO. PARTICIPANTS
International	VICH coordinators 10th teleconference meting	VICH	2023-02-21	Teleconference	8
International	VICH Steering Committee 3rd Special Virtual meeting	VICH	2023-06-21	Teleconference	21
International	VICH Discussion Group on Global Regulatory Dossier Framework 1st virtual meeting	VICH	2023-07-07	Teleconference	12
International	VICH SC Task Force 2023 for re-organisation 1st virtual meeting	VICH	2023-07-18	Teleconference	13
International	VICH Safety EWG virtual meeting on GL22	VICH	2023-08-07	Teleconference	14
International	VICH Safety EWG virtual meeting on GL23	VICH	2023-08-08	Teleconference	13
International	VICH coordinators 11th teleconference meting	VICH	2023-09-11	Teleconference	8
International	VICH SC Task Force 2023 for re-organisation 2nd virtual meeting	VICH	2023-09-11	Teleconference	14
International	VICH Discussion Group on Global Regulatory Dossier Framework 2nd virtual meeting	VICH	2023-09-26	Teleconference	12

International	VICH Safety EWG face-to-face meeting	VICH	2023-11-09	Tokyo	9
International	42th VICH steering committee meeting	VICH	2023-11-13	Tokyo	35
International	16th VICH Forum meeting	VICH	2023-11-15	Tokyo	51

TOR9: DATA AND INFORMATION DISSEMINATION

10. Publication and dissemination of any information within the remit of the mandate given by WOAH that may be useful to Members of WOAH

a) Articles published in peer-reviewed journals:

57

1) Andoh K, Nishimori A, Matsuura Y. The bovine leukemia virus-derived long non-coding RNA AS1-S binds to bovine hnRNPM and alters the interaction between hnRNPM and host mRNAs. Microbiol Spectr. 2023 Sep 6;11(5):e0085523. doi: 10.1128/spectrum.00855-23.

2) Aribam SD, Nakayama M, Ichimura S, Tokuyama K, Hara Y, Ogawa Y, Shimoji Y, Eguchi M. Differentiation of Salmonella vaccinated and infected animals by serological detection of antibody to T3SS effector SsaK in an indirect ELISA. J Microbiol Methods. 2023 Jun;209:106729. doi: 10.1016/j.mimet.2023.106729.

3) Aribam SD, Nakayama M, Ogawa Y, Shimoji Y, Eguchi M. Outer membrane protein BamA-based ELISA differentiates Salmonella-vaccinated chickens from naturally infected chickens. J Vet Med Sci. 2023 Aug 1;85(8):809-812. doi: 10.1292/jvms.23-0133.

4) Dolbec D, Lehoux M, Okura M, Takamatsu D, Gottschalk M, Segura M. Streptococcus suis surface-antigen recognition by antibodies and bacterial elimination is influenced by capsular polysaccharide structure. Front Cell Infect Microbiol. 2023 Jul 21;13:1228496. doi: 10.3389/fcimb.2023.

5) Dubovitskiy N, Derko A, Sobolev I, Prokopyeva E, Murashkina T, Solomatina M, Kurskaya O, Komissarov A, Fadeev A, Danilenko D, Petrova P, Mine J, Tsunekuni R, Uchida Y, Saito T, Shestopalov A, Sharshov K. Virological and genetic characterization of the unusual avian influenza H14Nx viruses in the Northern Asia. Viruses. 2023 Mar 11;15(3):734. doi: 10.3390/v15030734.

6) Endo T, Hirata S, Hayama Y, Kodera Y, Takeuchi M. Landscape elements affecting the ingestion of oral vaccine against classical swine fever in wild boar. Eur J Wildl Res Sep 2023 69, 102 (2023). doi: 10.1007/s10344-023-01733-8.

7) Goto Y, Fukunari K, Suzuki T. Multiplex RT-qPCR Application in early detection of bovine respiratory disease in healthy calves. Viruses. 2023 Mar 2;15(3):669. doi: 10.3390/v15030669.

8) Goto Y, Fukunari K, Tada S, Ichimura S, Chiba Y, Suzuki T. A multiplex real-time RT-PCR system to simultaneously diagnose 16 pathogens associated with swine respiratory disease. J Appl Microbiol. 2023 Nov 1;134(11):lxad263. doi: 10.1093/jambio/lxad263.

9) Hamada K, Kawashima S, Hoshinoo K, Ogawa Y, Ueno Y. Draft genome sequence of Pasteurella multocidastrain BD1769 with untypable capsular serotype isolated from a layer chicken. Microbiol Resour Announc. 2023 Nov 16;12(11):e0059423. doi: 10.1128/MRA.00594-23.

10) Hashiguchi M, Sugi S, Mizuno Y, Hoshinoo K, Kokuho T, Shibahara T. Citrobacter koseri related abortion and fetal septicemia in cattle. J Vet Med Sci. 2023 Oct 19;85(10):1094-1098. doi: 10.1292/jvms.23-0199.

11) Hata E. Genomic and molecular epidemiological analyses and antimicrobial susceptibility of bovine mycoplasmas in Japan. JARQ 2023 Apr;57 (2):111-122. doi: 10.6090/jarq.57.111

12) Hayama Y, Sawai K, Murato Y, Yamaguchi E, Kondo S, Yamamoto T. Analysis of effective spatial range of oral vaccination against classical swine fever for wild boar. Prev Vet Med. 2023 Dec;221:106080. doi: 10.1016/j.prevetmed.2023.106080.

13) Iwata T, Watanabe-Yanai A, Tamamura-Andoh Y, Arai N, Akiba M, Kusumoto M. Tryptanthrin reduces Campylobacter jejuni colonization in the chicken gut by a bactericidal mechanism. Appl Environ Microbiol. 2023 Feb 28;89(2):e0170122. doi: 10.1128/aem.01701-22.

14) Kato T, Kakuta T, Yonezuka A, Sekiguchi T, Machida Y, Xu J, Suzuki T, Park EY. Expression and purification of porcine rotavirus structural proteins in silkworm larvae as a vaccine candidate. Mol Biotechnol. 2023 Mar;65(3):401-409. doi: 10.1007/s12033-022-00548-3.

15) Kawai K, Kurumisawa T, Shinozuka Y, Higuchi H, Iwano H, Hayashi T, Ozawa M, Koike R, Uchiyama M. Antimicrobial susceptibility of bovine clinical mastitis pathogens in Japan and development of a simplified agar disk diffusion method for clinical practice. J Vet Med Sci. 2023 Feb 1;85(2):143-148. doi: 10.1292/jvms.21-0450.

16) Kitamura T, Masujin K, Yamazoe R, Kameyama KI, Watanabe M, Ikezawa M, Yamada M, Kokuho T. A spontaneously occurring African swine fever virus with 11 gene deletions partially protects pigs challenged with the parental strain. Viruses. 2023 Jan 22;15(2):311. doi: 10.3390/v15020311.

17) Kitamura Y, Kusajima Y, Okamoto M, Ueno Y, Mada T, Okura M, Takamatsu D. Development of a Streptococcus pluranimalium-specific PCR assay. J Microbiol Methods. 2023 Aug;211:106766. doi: 10.1016/j.mimet.2023.106766.

18) Kobayashi S, Tamamura-Andoh Y, Yamane I, Kusumoto M, Katsuda K. The association between farm-level antimicrobial usage and resistance of Staphylococcus spp., as the major genus isolated from aerosol samples, in Japanese piggeries. Front Vet Sci. 2023 Jul 24;10:1127819. doi: 10.3389/fvets.2023.1127819.

19) Komatsu T, Ohya K, Ota A, Nishiuchi Y, Yano H, Matsuo K, Odoi JO, Suganuma S, Sawai K, Hasebe A, Asai T, Yanai T, Fukushi H, Wada T, Yoshida S, Ito T, Arikawa K, Kawai M, Ato M, Baughn AD, Iwamoto T, Maruyama F. Unique genomic sequences in a novel Mycobacterium avium subsp. hominissuis lineage enable fine scale transmission route tracing during pig movement. One Health. 2023 May 10;16:100559. doi: 10.1016/j.onehlt.2023.100559.

20) Kurokawa A, Yamamoto Y. Immunohistochemical identification of T and B lymphocytes in formalin-fixed, paraffin-embedded tissues of 53 avian species using commercial antibodies. J Vet Med Sci. 2023 Oct 19;85(10):1121-1130. doi: 10.1292/jvms.23-0255.

21) Kusumoto M, Tamamura-Andoh Y, Hikoda-Kogiku Y, Magome A, Okuhama E, Sato K, Mizuno Y, Arai N, Watanabe-Yanai A, Iwata T, Ogura Y, Gotoh Y, Nakamura K, Hayashi T, Akiba M. Nationwide analysis of antimicrobial resistance in pathogenic Escherichia coli strains isolated from diseased swine over 29 years in Japan. Front Microbiol. 2023 Mar 17;14:1107566. doi: 10.3389/fmicb.2023.

22) Lu P, Zhou J, Wei S, Takada K, Masutani H, Okuda S, Okamoto K, Suzuki M, Kitamura T, Masujin K, Kokuho T, Itoh H, Nagata K. Comparative genomic and transcriptomic analyses of African swine fever virus strains. Comput Struct Biotechnol J. 2023 Aug 29;21:4322-4335. doi: 10.1016/j.csbj.2023.08.028.

23) Mada T, Goto Y, Kumagai M, Sakai H, Kanamori H, Takamatsu D. A calf with hind limb paralysis and dysstasia and a genome sequence analysis of an isolated Clostridium perfringens toxinotype E strain. J Vet Med Sci. 2023 Mar 1;85(3):279-289. doi: 10.1292/jvms.22-0432.

24) Matsubayashi M, Kinoshita M, Tsuchida S, Kobayashi A, Tamura N, Shibahara T, Kido Y, Kaneko A, Sasai K, Ushida K. Experimental evaluation of pathogenicity and acquired immunity of Eimeria species, E. uekii and E. raichoi, infecting Japanese rock ptarmigans in a subspecies of the birds. Int J Parasitol Parasites Wildl. 2023 Sep 9;22:167-174. doi: 10.1016/j.ijppaw.2023.09.005.

25) Matsubayashi M, Tsuchida S, Kobayashi A, Shibahara T, Teramoto I, Kido Y, Kaneko A, Nakamura H, Hasegawa M, Sasai K, Ushida K. Evaluation of the host specificity of Eimeria uekii and Eimeria raichoi for Japanese rock ptarmigans by oocyst transfer to taxonomically related birds. Parasitol Res. 2023 Aug;122(8):1795-1800. doi: 10.1007/s00436-023-07875-7.

26) Misumi W, Magome A, Okuhama E, Uchimura E, Tamamura-Andoh Y, Watanabe Y, Kusumoto M. CTX-M-55-type ESBL-producing fluoroquinolone-resistant Escherichia coli sequence type 23 repeatedly caused avian colibacillosis in Kagoshima Prefecture, Japan. J Glob Antimicrob Resist. 2023 Dec;35:325-331. doi: 10.1016/j.jgar.2023.10.015.

27) Miyaoka Y, Kadota C, Kabir MH, Hakim H, Yamaguchi M, Hasan MA, Shoham D, Murakami H, Kobayashi S, Takehara K. Isolation, molecular characterization, and disinfectants susceptibility of swine-carried mammalian orthoreoviruses in Japan in 2020-2022. J Vet Med Sci. 2023 Feb 1;85(2):185-193. doi: 10.1292/jvms.22-0476.

28) Murato Y, Hayama Y, Kondo S, Sawai K, Yamaguchi E, Yamamoto T. Region-wise analysis of beef cow movements in Japan. Front Vet Sci. 2023 Feb 2;10:1012978. doi: 10.3389/fvets.2023.1012978.

29) Murato Y, Hayama Y, Kondo S, Sawai K, Yamaguchi E, Yamamoto T. The probability distributions of the movement of dairy and beef cattle in Japan: a data note. BMC Res Notes. 2023 Jul 24;16(1):153. doi: 10.1186/s13104-023-06427-7.

30) Nabeshima K, Takadate Y, Soda K, Hiono T, Isoda N, Sakoda Y, Mine J, Miyazawa K, Onuma M, Uchida Y. Detection of H5N1 high pathogenicity avian influenza viruses in four raptors and two geese in Japan in the fall of 2022. Viruses. 2023 Sep 1;15(9):1865. doi: 10.3390/v15091865.

31) Nishimori A, Andoh K, Matsuura Y, Kohara J, Hatama S. Upregulation of host genes during disease progression in bovine leukemia virus infection is independent of overexpression of viral transcriptional regulators in vitro. Arch Virol. 2023 Mar 4;168(3):98. doi: 10.1007/s00705-023-05713-w.

32) Okada S, Inabu Y, Miyamoto H, Suzuki K, Kato T, Kurotani A, Taguchi Y, Fujino R, Shiotsuka Y, Etoh T, Tsuji N, Matsuura M, Tsuboi A, Saito A, Masuya H, Kikuchi J, Nagasawa Y, Hirose A, Hayashi T, Ohno H, Takahashi H. Estimation of silent phenotypes of calf antibiotic dysbiosis. Sci Rep. 2023 Apr 19;13(1):6359. doi: 10.1038/s41598-023-33444-0.

33) Okajima M, Takenaka-Uema A, Fujii Y, Izumi F, Kojima I, Ozawa M, Naitou K, Suda Y, Nishiyama S, Murakami S, Horimoto T, Ito N, Shirafuji H, Yanase T, Masatani T. Differential role of NSs genes in the neurovirulence of two genogroups of Akabane virus causing postnatal encephalomyelitis. Arch Virol. 2023 Dec 11;169(1):7. doi: 10.1007/s00705-023-05929-w.

34) Okuhama-Yoshida E, Nakayama M, Hattori M, Takamatsu D, Okura M. Improvement of the mismatch amplification mutation assay-PCR for discrimination between Streptococcus suis serotypes 2 and 1/2. J Microbiol Methods. 2023 Nov;214:106828. doi: 10.1016/j.mimet.2023.106828.

35) Payen S, Roy D, Okura M, Segura M, Gottschalk M. Study of the role of lipoprotein maturation enzymes in the pathogenesis of the infection caused by the Streptococcus suis serotype 2 sequence type 25 North American prototype strain. Pathogens. 2023 Nov 7;12(11):1325. doi: 10.3390/pathogens12111325.

36) Sakuma S, Tanikawa T, Tsunekuni R, Mine J, Kumagai A, Miyazawa K, Takadate Y, Uchida Y. Experimental infection of chickens with H5N8 high pathogenicity avian influenza viruses isolated in Japan in the winter of 2020-2021. Viruses. 2023 Nov 23;15(12):2293. doi: 10.3390/v15122293.

37) Sawai K, Arakawa A, Taniguchi M, Xiao B, Sawai M, Osaki M, Yamaguchi E, Hayama Y, Murato Y, Shimizu Y, Kondo S, Yamamoto T. Assessing population structure and migration patterns of wild boar (Sus scrofa) in Japan. Sci Rep. 2023 Dec 1;13(1):21186. doi: 10.1038/s41598-023-48215-0.

38) Shirafuji H, Murota K, Kishida N, Suda Y, Yanase T. Complete genome sequences of epizootic hemorrhagic disease virus serotypes 5 and 6 isolated in Japan. Arch Virol. 2023 Aug 14;168(9):230. doi: 10.1007/s00705-023-05853-z.

39) Suda Y, Murota K, Yanase T. Complete genome sequences of Sathuperi and Shamonda viruses isolated in Japan. J Vet Med Sci. 2023 Dec 19;85(12):1324-1326. doi: 10.1292/jvms.23-0275.

40) Takadate Y, Tsunekuni R, Kumagai A, Mine J, Kikutani Y, Sakuma S, Miyazawa K, Uchida Y. Different infectivity and transmissibility of H5N8 and H5N1 high pathogenicity avian influenza viruses isolated from chickens in Japan in the 2021/2022 season. Viruses. 2023 Jan 17;15(2):265. doi: 10.3390/v15020265.

41) Takadate Y, Tsunekuni R, Kumagai A, Mine J, Kikutani Y, Sakuma S, Miyazawa K, Uchida Y. Different Infectivity and transmissibility of H5N8 and H5N1 high pathogenicity avian influenza viruses isolated from chickens in Japan in the 2021/2022 Season. Viruses. 2023 Jan 17;15(2):265. doi: 10.3390/v15020265.

42) Takamatsu D, Yoshida E, Ueno Y. Oxytetracycline resistance of Melissococcus plutonius strains in Japan J Apic Res. 2023 May;63(2):306-309. doi: 10.1080/00218839.2023.2213401.

43) Takamatsu D. Atypical Melissococcus plutonius strains: their characteristics, virulence, epidemiology, and mysteries. J Vet Med Sci. 2023 Sep 1;85(9):880-894. doi: 10.1292/jvms.23-0180.

44) Takami S, Shibahara T, Sasai K, Matsubayashi M. Occurrence, histopathological findings, and molecular identification of pathogenic Eimeria infections in rabbits (Mammalia: Lagomorpha) in Japan. Acta Parasitol. 2023 Jun;68(2):453-457. doi: 10.1007/s11686-023-00678-x.

45) Tanikawa T, Watanabe S, Mikami O, Miyazaki A. Genetics of the rabbit haemorrhagic disease virus strains responsible for rabbit haemorrhagic disease outbreaks in Japan between 2000 and 2020. J Gen Virol. 2023 May;104(5). doi: 10.1099/jgv.0.001846.

46) Tsugami Y, Nii T, Kobayashi K, Isobe N. Potential effects of gingerol topical application on components of the innate immunity in lactating goat mammary glands. Innate Immun. 2023 Oct;29(7):135-149. doi: 10.1177/17534259231191252.

47) Ukita M, Kuwata K, Tanaka E, Matsuyama R, Isoda N, Sakoda Y, Yamamoto T, Makita K. Exploring appropriate strategies for vaccination against classical swine fever under a dynamic change in antibody titer in sows after starting vaccination in a Japanese farm setting. 2023 NOV; 5541976. doi: 10.1155/2023/5541976.

48) Watanabe M, Goswami P, Kure K, Yamane I, Kobayashi S, Akiba M, Guruge KS. Characteristics of antimicrobial residues in manure composts from swine farms: Residual patterns, removal efficiencies, and relation to purchased quantities and composting methods in Japan. J Hazard Mater. 2023 Oct 5;459:132310. doi: 10.1016/j.jhazmat.2023.132310.

49) Watanabe M, Guruge KS, Uegaki R, Kure K, Yamane I, Kobayashi S, Akiba M. Occurrence and the potential ecological risk of veterinary antimicrobials in swine farm wastewaters in Japan: Seasonal changes, relation to purchased quantity and after termination of oxytetracycline usage. Environ Int. 2023 Mar;173:107812. doi: 10.1016/j.envint.2023.107812.

50) Watanabe M, Kitamura T, Nagata K, Ikezawa M, Kameyama KI, Masujin K, Kokuho T. Development of a novel indirect ELISA for the serological diagnosis of african swine fever using p11.5 protein as a target antigen. Pathogens. 2023 May 29;12(6):774. doi: 10.3390/pathogens12060774.

51) Watanabe S, Yamamoto Y, Kurokawa A, Iseki H, Tanikawa T, Mase M. Recombinant fiber-1 protein of fowl adenovirus serotype 4 induces high levels of neutralizing antibodies in immunized chickens. Arch Virol. 2023 Feb 9;168(3):84. doi: 10.1007/s00705-023-05709-6.

52) Wu X, Notsu K, Matsuura Y, Mitoma S, El Daous H, Norimine J, Sekiguchi S. Development of droplet digital PCR for quantification of bovine leukemia virus proviral load using unpurified genomic DNA. J Virol Methods. 2023 May;315:114706. doi: 10.1016/j.jviromet.2023.114706.

53) Yamaguchi E, Takagi M, Osaki M, Hayama Y, Yamamoto T. Sex-based differences in the distribution of Aujeszky's disease-seropositive Japanese wild boar. Porcine Health Manag. 2023 Jun 13;9(1):28. doi: 10.1186/s40813-023-00323-z.

54) Yamamoto Y, Ishihara M, Kurokawa A, Mase M. Susceptibility and pathogenesis of eurasian tree sparrows experimentally inoculated with velogenic Newcastle disease virus. Avian Dis. 2023 Mar;67(1):57-64. doi: 10.1637/aviandiseases-D-22-00082.

55) Yanase T, Murota K, Suda Y. Whole-genome sequence analysis of a novel orthobunyavirus isolated in Japan in the 1980s. Arch Virol. 2023 Jan 19;168(2):67. doi: 10.1007/s00705-022-05639-9.

56) Yoshizawa N, Hikoda-Kogiku Y, Tamamura-Andoh Y, Kusumoto M. mcr-1 remains detectable in various Escherichia coli lineages isolated from healthy swine after withdrawal of colistin use on the farm. J Vet Med Sci. 2023 May 3;85(5):536-540. doi: 10.1292/jvms.22-0316.
57) Manao O, Motoshi K, Hitoshi A, Yukari I, Mio K, Michiko K, Akemi K, Shoko I. Characterization of Actinobacillus pleuropneumoniae isolated from pigs in Japan using whole genome sequencing. Comparative Immunology, Microbiology and Infectious Diseases 102 (2023): 102062.

b) International conferences:
8
1) Dr. KOBAYASHI Sota attended on The 3rd Joint Meeting of Veterinary Science in East Asia, May 1-3, 2023, gave the presentation about Achievements from the Recent AMR Research Project in Japan.
2) Dr. SHIMOJI Yoshihiro. attended on The 3rd Joint Meeting of Veterinary Science in East Asia, May 1-3, 2023, and gave the presentation about Erysipelothrix rhusiopathiae as a potential vaccine platform for mucosal immunization of pigs.
3) Dr. KOKUHO Takehiro. attended on The 3rd Joint Meeting of Veterinary Science in East Asia, May 1-3, 2023, and gave the presentation about Tackling with swine fevers.
4) Dr. TAKAMATSU Daisuke. attended on The 5th Veterinary Technology & Nursing International Seminar, December 13-14, 2023, and gave the presentation about Bacteria in the environment pose a risk of antimicrobial resistance in Paenibacillus larvae, the causative agent of American foulbrood of honeybees.
5) Dr. SHIMAZAKI Tomoaki, Dr. SEKIYA Tatsuro, Dr. KAWANISHI Michiko, Dr. MATSUDA Mari, and Dr. HIRAOKA Yukari attended on 5th G7 Chief Veterinary Officers Forum on 21th September, 2023. Dr. SEKIYA gave the presentation about actions and challenges for containment of AMR in Japan.
6) Dr. HOSOI Yuta attended the Regional Antimicrobial Resistance Technical Advisory Group (TAG) Meeting for the animal health sector on 29th-30th November 2023 and gave the presentation about the Japanese Veterinary Antimicrobial Resistance Monitoring System.
7) Dr. SEKIYA Tatsuro and Dr. KAWANISHI Michiko attended G7 High-Level Technical Meeting on One Health held virtually on 31th October, 2023 with the participation of ministries, competent authorities and agencies in the fields of human and animal health, food safety, agriculture and environment, and Dr. SEKIYA gave a remark of one health activities in animal health sector including AMR.
8) Dr. SEKIGUCHI Hideto and Dr. KAWASHIMA Taiki attended on the International Workshop on Veterinary Products 2023 on 30th October - 3rd November in Republic Korea. Dr. KAWASHIMA gave the presentation titled "Approval and Import Procedure for Veterinary Medical Products (VMPs) and Feed Additives in Japan".

c) National conferences:
1
Dr. KAWANISHI Michiko attended the Japan Veterinary Medical Association Annual Veterinary Conference on 1st-3rd December, 2023 and gave the presentation about the achievements and challenges of National Action plan on AMR (2016-2020).

d) Other (Provide website address or link to appropriate information):
0

11. What have you done in the past year to advance your area of focus, e.g. updated technology?
1) Discovery of interference by "non protein coding RNA" of bovine leukemia virus
2) Development of a simple pre-processing method for the detection of virus-derived genetic materials in blood samples (for diagnosis of classical swine fever and African swine fever)
3) Development of a new molecular testing method that allows the differentiation of field and vaccine strains of classical swine fever virus
4) Scheme and data from JVARM (Japanese Veterinary Antimicrobial Resistance Monitoring System) has been published in English on HP of NVAL.
https://www.maff.go.jp/nval/yakuzai/yakuzai_p3.html

12. Additional comments regarding your report: