OIE Collaborating Centres Reports Activities

Activities in 2021

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Title of collaborating centre:	Diagnosis, Control and Assessment in Asia
Address of 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
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Name of Director of Institute (Responsible Official):	(1) National Veterinary Assay Laboratory: Dr. OHARA Kenji (2) National Institute of Animal Health, NARO: Dr.TSUTSUI Toshiyuki
Name (including Title and Position) of Head of the Collaborating Centre (formally OIE Contact Point):	Dr. AKIBA Masato, Deputy Director, Department of Research Promotion, National Institute of Animal Health, NARO
Name of writer:	(1) NVAL: Dr. OCHIAI Mariko, Inspector, Assay Division I and Dr. IWAMOTO Shoko, Senior Research Officer, Assay Division I (2) NIAH,NARO: Dr. YOSHIHARA Kazuhiro, Coordinator, Kagoshima Research Station

ToR: To provide services to the OIE, in particular within the region, in the designated specialty, in support of the implementation of OIE policies and, where required, seek for collaboration with OIE Reference Laboratories

ToR: To identify and maintain existing expertise, in particular within its region

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

Epidemiology, surveillance, risk assessment, modelling	
Title of activity	**Scope**
Participation in Tokyo AMR One Health Conference held on 17 Feb. 2021.	Dr. KOBAYASHI S. participated the conference as an expert of AMR on livestock to discuss its risk and the direction of the R&D (research and development) based on the one-health approach.
Attendance at web meetings regarding OIE case definition for Nipah virus encephalitis held on 11, 16, 23 June and 31 Aug.	Dr. YAMADA M. participated in the web meeting to draft the case definition for Nipah virus encephalitis.
Veterinary medicinal products	
Title of activity	**Scope**
AMR surveillance training for Nepal, Feb-May, 2021	Dr. SHIMAZAKI Yoko, Dr. OZAWA Manao, Dr. MATSUDA Mari, Ms. AKAMA Ryoko, and Dr. FURUYA Yukari provided training materials to answer Nepal's requests via e-mails.
2nd Meeting of the FAO/OIE Consultation Meeting of Regional monitoring and Surveillance Guidelines Volume 5:"Monitoring antimicrobial use at the farm level". 27-29th April, 2021.	Dr. MATSUDA Mari participated the meeting as an expert of AMU monitoring.
OIE Webinar to Introduce the Future OIE AMU Data Collection IT System, 10-11th May, 2021	Dr. NODA Ken participated in the meeting as a National Focal Point of Japan. Dr. MATSUDA Mari participated the meeting as an expert of AMU monitoring.
Working together to fight AMR in Asia Introductory webinar, 10th May,2021	Dr. FURUYA Yukari participated as an expert of AMR monitoring.
Virtual meeting of AMR storytellers from the Asia-Pacific Tripartite plus UNEP, 24th Nov, 2021	Dr. SHIMAZAKI Yoko and Dr. MATSUDA Mari participated in the meeting as experts of AMR monitoring.

ToR : To propose or develop methods and procedures that facilitate harmonisation of international standards and guidelines applicable to the designated specialty

2. Proposal or development of any procedure that will facilitate harmonisation of international regulations applicable to the surveillance and control of animal diseases, food safety or animal welfare

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)	☒Surveillance and control of animal diseases ☒Food safety ☒Animal welfare
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)	☒Surveillance and control of animal diseases ☒Food safety ☐Animal welfare
Development of GL concerning VICH harmonisation criteria to waive laboratory animal batch safety testing for vaccines for veterinary use.	To develop a new VICH GL	☒Surveillance and control of animal diseases ☐Food safety ☒Animal welfare
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)	☒Surveillance and control of animal diseases ☐Food safety ☐Animal welfare
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)	☒Surveillance and control of animal diseases ☐Food safety ☐Animal welfare
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.	☒Surveillance and control of animal diseases ☐Food safety ☐Animal welfare
Development of VICH GL concerning combination products.	To develop the new VICH GL (General GL on Pharmaceutical Combination Products)	☒Surveillance and control of animal diseases ☐Food safety ☐Animal welfare
Development of VICH GL concerning waiving on bioequivalence testing.	To develop the new VICH GL	☐Surveillance and control of animal diseases ☐Food safety ☒Animal welfare
Development of VICH GL concerning stability on medicated premixes.	To develop the new VICH GL	☒Surveillance and control of animal diseases ☐Food safety ☐Animal welfare

Development of VICH GL concerning quality on GMP for active pharmaceutical ingredients.	To develop the new VICH GL	☒Surveillance and control of animal diseases ☐Food safety ☐Animal welfare

ToR: To establish and maintain a network with other OIE Collaborating Centres designated for the same specialty, and should the need arise, with Collaborating Centres in other disciplines

ToR: To carry out and/or coordinate scientific and technical studies in collaboration with other centres, laboratories or organisations

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

Yes

Name of OIE CC/RL/other organisation(s)	Location	Region of networking Centre	Purpose
Asia AMR Lab network (Laboratories for Antimicrobial Resistance in Bhutan, Cambodia, Chinese Taipei, Hong Kong, Korea, Mongolia, Myanmar, Philippines, Singapore, Sri Lanka, Thailand, Vietnam, Malaysia and Japan.)	Bhutan, Cambodia, Chinese Taipei, Hong Kong, Korea, Mongolia, Myanmar, Philippines, Singapore, Sri Lanka, Thailand, Vietnam, Malaysia, Japan	☐Africa ☐Americas ☒Asia and Pacific ☐Europe ☐Middle East	Information exchange of AMR in Asia
FAO-OIE Coordination Group of Leading Antimicrobial Resistance（AMR） （Institutions in Asia and the Pacific	Thailand, Singapore, New Zealand, Japan	☐Africa ☐Americas ☒Asia and Pacific ☐Europe ☐Middle East	Share work plan on AMR surveillance for the Asia-Pacific region.
Lanzhou Veterinary Research Institute, Chinese Academy of Agricultural Sciences, China	China	☐Africa ☐Americas ☒Asia and Pacific ☐Europe ☐Middle East	Development of the research cooperation in the field of veterinary science including surveillance, diagnosis and control of foot-and-mouth disease.

Animal Health Research Institute, Council of Agriculture, Taiwan	Taiwan	☐Africa ☐Americas ☒Asia and Pacific ☐Europe ☐Middle East	Research cooperation in the sustainable development of the agriculture and food industry
University of Montreal, Canada	Canada	☐Africa ☒Americas ☐Asia and Pacific ☐Europe ☐Middle East	Collaborative research on Streptococcus
Harbin Veterinary Research Institute, Chinese Academy of Agricultural Sciences, China	China	☐Africa ☐Americas ☒Asia and Pacific ☐Europe ☐Middle East	Research cooperation in the field of veterinary science including surveillance, diagnosis and control of avian influenza
Global African Swine Fever Research Alliance (GARA) Partners	Global	☒Africa ☒Americas ☒Asia and Pacific ☒Europe ☒Middle East	To cooperate to achieve the mission of GARA
State Central Veterinary Laboratory, Mongolia	Mongolia	☐Africa ☐Americas ☒Asia and Pacific ☐Europe ☐Middle East	Technological cooperation, information exchange, and interchange of researchers in transboundary animal diseases including foot-and-mouth disease and African swine fever
The Federal State Budgetary Institution “Research Center of Experimental and Clinical Medicine”, Russia	Russia	☐Africa ☐Americas ☒Asia and Pacific ☒Europe ☐Middle East	Collaboration agreement on emerging pathogens and avian influenza surveillance and study
Federal Research Center Fundamental and Translational Medicine (CFTM)	Russia	☐Africa ☐Americas ☒Asia and Pacific ☒Europe ☐Middle East	2nd Addendum to Collaboration Agreement for collaboration agreement on avian influenza surveillance and study
National Institute of Animal Health,Department of Livestock Development of the Ministry of Agriculture and Cooperatives	Thailand	☐Africa ☐Americas ☒Asia and Pacific ☐Europe ☐Middle East	General MOU on strengthening research cooperation in the fields of mutual interest on veterinary science.

Animal and Plant Quarantine Agency of the Ministry of Agriculture, Food and Rural Affairs of the Republic of Korea (MAFRA) (“APQA”)	Korea	☐Africa ☐Americas ☒Asia and Pacific ☐Europe ☐Middle East	Development of the research cooperation in avian influenza, FMD, ASF and arbovirus
National Institute of Veterinary Research (NIVR)	Vietnam	☐Africa ☐Americas ☒Asia and Pacific ☒Europe ☐Middle East	Collaborative research on the characteristics of epidemic viruses in Vietnam, control methods for viral infections in livestock, and development of vaccines.

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

No

ToR: To place expert consultants at the disposal of the OIE.

5. Did your Collaborating Centre place expert consultants at the disposal of the OIE?

Yes

Name of expert	Kind of consultancy	Subject
(A) Dr. NODA Ken, Dr. EGUCHI Kaoru (B) Mr. OHMORI Junichi	VICH Steering Committee Member	(A) Member (B) Coordibator
(A) Dr. SATO Kota (B) Dr. YAMASHITA Maiko (-August), Dr. KIKUTANI Yuto (August-), (C) Dr. KIKUTANI Yuto (-August), Dr. KIDA Moeko (August-)	VICH Biologicals Expert Working Group	(A) Chairperson (B) Member (C) Advisor
(A) Dr. OGATA Tomoko (B) Dr. TAKAHASHI Chikako (C) Dr. YAMADA Arisa (-May), Dr. TANITA Natsumi (May-), Dr. ISHIKAWA Ryoko	VICH Quality Expert Working Group	(A) Chairperson (B) Member (C) Advisor
(A) Dr. HOSODA Yuko (-August), Ms. AKAMA Ryoko (August-) (B) Dr. OGINO Tomoe	VICH Bioequivalence Expert Working Group	(A) Member (B) Advisor

(A) Dr. OGINO Tomoe (B) Mr. KOIKE Ryoji	VICH Anthelmintics Expert Working Group	(A) Member (B) Advisor
(A) Dr. OZAWA Manao (B) Dr. OGATA Tomoko	VICH Safety Expert Working Group	(A) Member (B) Advisor
Mr. KOIKE Ryoji	VICH Metabolism and Residue Kinetics Expert Working Group	Member
(A) Dr. OGURA Aki (B) Dr. NODA Ken, Dr. EGUCHI Kaoru	VICH Expert Working Group for a General Guideline on Pharmaceutical Combination Products	(A) Member (B) Advisor
(A) Ms. KANEHARA Mariko (B) Dr. EGUCHI Kaoru, Mr. MIYAZAKI Teruki	VICH Pharmacovigilance Expert Working Group	(A) Member (B) Advisor
Dr. SHIMAZAKI Yoko, Dr. MATSUDA Mari, Dr. OZAWA Manao, Ms. AKAMA Ryoko, Dr. FURUYA Yukari, Dr. HARADA Saki	OIE RRAP Experts on AMR monitoring.	Member
Dr. SHIMAZAKI Yoko	Ad hoc CODEX Intergovernmental Task Force on Antimicrobial Resistance (TFAMR) Electronic Working Group (EWG), Virtual session	Member
Dr. OZAWA Manao	Ad hoc CODEX Intergovernmental Task Force on Antimicrobial Resistance (TFAMR) electronic Working Group (EWG), Virtual session	Member
Dr. FURUYA Yukari	Ad hoc CODEX Intergovernmental Task Force on Antimicrobial Resistance (TFAMR) electronic Working Group (EWG), Virtual session	Member
Dr. MATSUDA Mari	OIE AMU Database Technical Reference Group	Member
Dr. KAWAJI Satoko	OIE Biological Standards Commission	Member
Dr. YANASE Tohru	OIE Regional Resource Persons about Arthropod vectors surveillance and control	Member
(A) Dr. KOKUHO Takehiro (B) Dr. TAKAGI Michihiro	FAO-OIE Rinderpest Holding Facility (A) Category A (B) Category B	Contact Person

(A) Dr. IWAMARU Yoshifumi (B) Dr. FUKAI Katsuhiko (C) Dr. SAITO Takehiko (D) Dr. KOKUHO Takehiro	OIE Reference Laboratory	(A) BSE (B) CSF (C) Swine Influenza (D) Rinderpest

ToR: To provide, within the designated specialty, scientific and technical training to personnel from OIE Member Countries

6. Did your Collaborating Centre provide scientific and technical training, within the remit of the mandate given by the OIE, to personnel from OIE Member Countries?

Yes
a) Technical visits: 0
b) Seminars: 1
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	The Regional virtual Training on Antimicrobial Resistance (AMR), Tokyo, Japan, February – May, 2021.	Nepal	3

ToR: To organise and participate in scientific meetings and other activities on behalf of the OIE

7. Did your Collaborating Centre organise or participate in the organisation of scientific meetings on behalf of the OIE?

Yes

National/International	Title of event	Co-organiser	Date (mm/yy)	Location	No. Participants
International	VICH coordinators 3rd teleconference meeting	VICH	14th January, 2021	Teleconference	13

International	VICH steering committee 1st special virtual meeting	VICH	25th February, 2021	Teleconference	31
International	VICH steering committee 2nd special virtual meeting	VICH	21th June, 2021	Teleconference	27
International	VICH coordinators 4th teleconference meeting	VICH	9th July, 2021	Teleconference	12
International	VICH SC Task Force to elaborate proposals for updated VICH structures virtual meeting, 1st, 2nd and 3rd	VICH	1st: 9th July, 2nd: 31th August, 3rd: 12th October	Teleconference	21

ToR: To collect, process, analyse, publish and disseminate data and information relevant to the designated specialty

8. Publication and dissemination of any information within the remit of the mandate given by the OIE that may be useful to Member Countries of the OIE

a) Articles published in peer-reviewed journals: 41
(1) NVAL
1) M. Ozawa, M. Kawanishi, M. Uchiyama, D. Mitsuya, H. Abo, R. Koike and M, Kijima. Correlation of minimum inhibitory concentrations between human and animal antimicrobials against Escherichia coli isolated from livestock. Journal of Veterinary Diagnostic Investigation. 33(4) 2021

(2) NIAH,NARO
1) Andoh K, Akagami M, Nishimori A, Matsuura Y, Kumagai A, Hatama S. Novel single nucleotide polymorphisms in the bovine leukemia virus genome are associated with proviral load and affect the expression profile of viral non-coding transcripts. Vet Microbiol. 2021 Oct; 261:109200.

2) Arai N, Sekizuka T, Tamamura-Andoh Y, Barco L, Hinenoya A, Yamasaki S, Iwata T, Watanabe-Yanai A, Kuroda M, Akiba M, Kusumoto M. Identification of a Recently Dominant Sublineage in Salmonella 4,[5],12:i:- Sequence Type 34 Isolated From Food Animals in Japan. Front Microbiol. 2021 Jul 1; 12:690947.

3) Arimitsu K., Kohda T., Mukamoto M., Kusumoto M. Evaluation of immunochromatographic test of Shiga toxin 2e in enrichment cultures of swine edema disease clinical samples. J Vet Med Sci. 2021 Dec 9;83(12):1913-1917.

4) Iseki H, Watanabe S, Mase M. A potential system for the isolation and propagation of porcine deltacoronavirus using embryonated chicken eggs. J Virol Methods. 2021 Apr; 290:114068.

5) Itoh M, Furuoka M, Baba Y, Saitoh T, Hata E, Hirano Y, Senna K, Yamada K. Relationship between genital carriage and udder infection with Mycoplasma bovigenitalium in dairy farms. Jpn J Vet Res.2021. 69(1),71-75.

6) Iwanaga M, Kamikawa A, Imai N, Shimada K, Degawa Y, Hanafusa Y, Shibahara T. Striatal necrosis caused by Lichtheimia ramosa in a neonatal calf. J Vet Med Sci. 2021 Dec 9;83(12):1943-1947.

7) Katayama A, Miyazaki A, Okazaki N, Nakayama T, Mikami O. An outbreak of rabbit hemorrhagic disease (RHD)

caused by Lagovirus europaeus GI.2/rabbit hemorrhagic disease virus 2 (RHDV2) in Ehime, Japan. J Vet Med Sci. 2021 Jun 9;83(6):931-934.

8) Kiku Y, Nagasawa Y, Sugawara K, Yabusaki T, Oono K, Fujii K, Maehana K, Hayashi T. Evaluation of a rapid coliform detection kit from clinical mastitis milk using colloidal gold nanoparticle-based immunochromatographic strips. J Vet Med Sci. 2021 Oct 31;83(11):1628-1633.

9) Kimura K, Yanase T, Kato T. Histopathological, Immunohistochemical and In-Situ Hybridization Findings in Suckling Rats Experimentally Infected with Akabane Genogroups I and Ⅱ, Aino and Peaton Viruses. J Comp Pathol. 2021 Aug; 187:27-39.

10) Kumagai A, Kajikawa S, Miyazaki A, Hatama S. Complete Genome Sequence of Bovine Adenovirus Type 7 Strain Fukuroi, Isolated from a Cow with Respiratory Disease. Microbiol Resour Announc. 2021 Mar 11;10(10)

11) Kumagai A, Kawauchi K, Andoh K, Hatama S. Sequence and unique phylogeny of G genes of bovine respiratory syncytial viruses circulating in Japan. J Vet Diagn Invest. 2021 Jan;33(1):162-166.

12) Mase M. Hemagglutinin-neuraminidase gene of genotype VII Newcastle disease virus strains isolated in Japan. J Vet Med Sci. 2021 Nov 17. doi: 10.1292/jvms.21-0490. Online ahead of print

13) Mase M, Gotou M, Inoue D, Masuda T, Watanabe S, Iseki H. Genetic Analysis of Avian Reovirus Isolated from Chickens in Japan. Avian Dis. 2021 Sep;65(3):346-350.

14) Mase M, Gotou M, Inoue D, Watanabe S, Iseki H. Genotyping of infectious bronchitis viruses isolated in Japan during 2008-2019. J Vet Med Sci. 2021 Apr 3;83(3):522-526.

15) Mase M, Hiramatsu K, Nishijima N, Iseki H, Watanabe S. Identification of specific serotypes of fowl adenoviruses isolated from diseased chickens by PCR. J Vet Med Sci. 2021 Jan 21;83(1):130-133.

16) Mase M, Hiramatsu K, Watanabe S, Iseki H. Complete Genome Sequence of Infectious Bronchitis Virus Strain JP/KH/64, Isolated in Japan. Microbiol Resour Announc. 2021 Oct 7;10(40)

17) Mase M, Iseki H, Watanabe S. Complete Genome Sequence of a Fowl Adenovirus D Strain Isolated from Chickens with Inclusion Body Hepatitis in Japan. Microbiol Resour Announc. 2021 Nov 18;10(46): e0094021

18) Masujin K, Kitamura T, Kameyama K-, Okadera K, Nishi T, Takenouchi T, Kitani H, Kokuho T. An immortalized porcine macrophage cell line competent for the isolation of African swine fever virus. Sci Rep. 2021 Feb 26;11(1):4759.

19) Matsubayashi M, Kobayashi A, Kaneko M, Kinoshita M, Tsuchida S, Shibahara T, Hasegawa M, Nakamura H, Sasai K, Ushida K. Distribution of Eimeria uekii and Eimeria raichoi in cage protection environments for the conservation of Japanese rock ptarmigans (Lagopus muta japonica) in the Japanese Alps. Int J Parasitol Parasites Wildl. 2021 May 20; 15:225-230.

20) Misumi W, Funamori T, Hamada K, Iwamoto J, Fujisono S, Chitose K, Kusumoto M. Association between antimicrobial treatment and resistance of pathogenic Escherichia coli isolated from diseased swine in Kagoshima Prefecture, Japan. J Vet Med Sci. 2021 Mar 11;83(3):358-369.

21) Murato Y, Hayama Y, Shimizu Y, Sawai K, Yamaguchi E, Yamamoto T. Region-wise analysis of dairy cow movements in Japan. BMC Vet Res. 2021 Sep 9;17(1):305.

22) Murota K, Ishii K, Mekaru Y, Araki M, Suda Y, Shirafuji H, Kobayashi D, Isawa H, Yanase T. Isolation of Culicoides- and Mosquito-Borne Orbiviruses in the Southwestern Islands of Japan Between 2014 and 2019. Vector Borne Zoonotic Dis. 2021 Oct;21(10):796-808.

23) Nagasawa Y, Uchida I, Tanabe F, Hirose A, Sugawara K, Kiku Y, Iwata T, Kato C, Yamashita Y, Hayashi T. Intramammary infection caused by Staphylococcus aureus increases IgA antibodies to iron-regulated surface determinant-A, -B, and -H in bovine milk. Vet Immunol Immunopathol. 2021 May; 235:110235.

24) Nakamura K, Okumura K, Harada M, Okamoto M, Okura M, Takamatsu D. Peritrophic matrix-degrading proteins are dispensable virulence factors in a virulent Melissococcus plutonius strain. Sci Rep. 2021 Apr 22;11(1):8798.

25) Nishi T, Morioka K, Kawaguchi R, Yamada M, Ikezawa M, Fukai K. Quantitative analysis of infection dynamics of foot-and-mouth disease virus strain O/CATHAY in pigs and cattle.
PLoS One. 2021 Jan 22;16(1)

26) Nishikawa S, Shiraiwa K, Shimoji Y. A PCR assay to specifically detect serovar 1a strains of Erysipelothrix rhusiopathiae and differentiate them from serovar 2 strains possessing an intact ERH_1440 gene. J Vet Med Sci. 2021 Nov 18.

27) Nishimori A, Andoh K, Matsuura Y, Kumagai A, Hatama S. Establishment of a simplified inverse polymerase chain reaction method for diagnosis of enzootic bovine leukosis. Arch Virol. 2021 Mar;166(3):841-851.

28) Nishimori A, Hirose S, Ogino S, Andoh K, Isoda N, Sakoda Y. Endemic infections of bovine viral diarrhea virus genotypes 1b and 2a isolated from cattle in Japan between 2014 and 2020. J Vet Med Sci. 2021 Dec 14. doi: 10.1292/jvms.21-0480. Online ahead of print.

29) Okamoto M, Kumagai M, Kanamori H, Takamatsu D. Antimicrobial Resistance Genes in Bacteria Isolated from Japanese Honey, and Their Potential for Conferring Macrolide and Lincosamide Resistance in the American Foulbrood Pathogen Paenibacillus larvae. Front Microbiol. 2021 Apr 29; 12:667096.

30) Oki M, Ikezawa M, Nishi T, Fukai K, Yamada M. Immunohistochemical analysis of the distribution of classical swine fever (CSF) viral antigen in boar-pig hybrids and pigs four weeks after infection. J Vet Med Sci. 2021 Nov 18.doi: 10.1292/jvms.21-0226. Online ahead of print.

31) Okura M, Auger J. P. Shibahara T, Goyette-Desjardins G, Van Calsteren M. R, Maruyama F, Kawai M, Osaki M, Segura M, Gottschalk M, Takamatsu D. Capsular polysaccharide switching in Streptococcus suis modulates host cell interactions and virulence. Sci Rep. 2021. 11(1):6513.

32) Sajiki Y, Konnai S, Nagata R, Kawaji S, Nakamura H, Fujisawa S, Okagawa T, Maekawa N, Kato Y, Suzuki Y, Murata S, Mori Y, Ohashi K. The enhancement of Th1 immune response by anti-PD-L1 antibody in cattle infected with Mycobacterium avium subsp. Paratuberculosis. J Vet Med Sci. 2021 Feb 25;83(2):162-166.

33) Shimizu Y, Hayama Y, Murato Y, Sawai K, Yamaguchi E, Yamamoto T. Epidemiological analysis of classical swine fever in wild boars in Japan. BMC Vet Res. 2021 May 11;17(1):188.

34) Shinkai H, Takahagi Y, Matsumoto T, Toki D, Takenouchi T, Kitani H, Sukegawa S, Suzuki K, Uenishi H. A specific promoter-type in ribonuclease L gene is associated with phagocytic activity in pigs J Vet Med Sci. 2021 Sep 15;83(9):1407-1415.

35) Suda Y, Murota K, Shirafuji H, Yanase T. Genomic analysis of putative novel serotypes of Tibet orbivirus isolated in Japan. Arch Virol. 2021 Apr;166(4):1151-1156.

36) Tamamura-Andoh Y, Niwa H, Kinoshita Y, Uchida-Fujii E, Arai N, Watanabe-Yanai A, Iwata T, Akiba M, Kusumoto M. Duplication of bla CTX-M-1 and a class 1 integron on the chromosome enhances antimicrobial resistance in Escherichia coli isolated from racehorses in Japan. J Glob Antimicrob Resist. 2021 Dec; 27:225-227.

37) Tamamura-Andoh Y, Tanaka N, Sato K, Mizuno Y, Arai N, Watanabe-Yanai A, Akiba M, Kusumoto M. A survey of antimicrobial resistance in Escherichia coli isolated from wild sika deer (Cervus nippon) in Japan. J Vet Med Sci. 2021 May 9;83(5):754-758.

38) Ueno Y, Ogawa Y, Takamura Y, Nagata R, Kawaji S, Mori Y. Complete Genome Sequence of Mycobacterium avium subsp. paratuberculosis Strain 42-13-1, Isolated in Japan. Microbiol Resour Announc. 2021 Apr 15;10(15)

39) Watanabe A, Kawai K, Hata E, Goto S, Shinozuka Y, Kurumisawa T, Koyama Y, Chikayama Y, Kiku Y, Nagasawa Y, Hayashi T. Sequence type and primary structure of the vru gene upstream region of Streptococcus uberis isolated from bovine clinical mastitis in Japan. Jpn J Vet Res. in press.

40) Yamaguchi E, Hayama Y, Shimizu Y, Murato Y, Sawai K, Yamamoto T. Additive Bayesian network analysis of the relationship between bovine respiratory disease and management practices in dairy heifer calves at pre-weaning stage. BMC Vet Res. 2021 Nov 23;17(1):360.

b) International conferences: 2
(2) NIAH,NARO

1) Kobayashi S, Overview of The Research Project on Livestock AMR in Japan. Online Asia Pacific Workshop on AMR in 2021. March 4-5, 2021

2) Tsuchiya K, et. Al., Disease-detection system using body-conducted sounds in livestock. 27th International Congress on Sound and Vibration. July 11-16, 2021

c) National conferences: 0
omission

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

9. Additional comments regarding your report: