fromspreading.

Materials and Methods: The avian influenza virus strain (A/chicken/Korea/MS96/96)was used to evaluate efficacy of 5 different disinfectants(Glutaraldehyde, MPS+ NaDCC, Citric acid1, Citric acid2, NaDCC ingredients) by reacting for 1, 5 and30 min at 4℃, respectively. The virus titers were at least 10^7 EID_{50}(Egg infectious dose) values. Two-hundred microliters of the mixture ofdisinfectant and virus was inoculated into the embryonated chicken eggs andvirus reduction was calculated by using HA test to calculate the EID_{50}on a 96-well plate (SPL, Korea). Disinfectants were diluted with distilledwater containing 0.305 g of $CaCl_2$ and 0.139 g of $MgCl_2.6H_2O$per liter.

Results: All of the five disinfectants passed thedisinfectant potency test. The reaction of the virus with disinfectant for 30minutes showed > 4 log or similar effect. However, when the virus anddisinfectant were reacted for a short period of time (1 minute, 5 minutes), thenumber of 4 log effect was found to be reduced. Additional experiments mayrequire the reaction with disinfectants in organic conditions and theirvalidation as a pathogenic microorganism in the field.

Conclusions: In this study, we evaluated the efficacy of 5 disinfectants with different reaction times. Further studies will beconducted to measure disinfectant effectiveness against pathogenicmicroorganisms causing animal disease from the point of the practical bio-security.

P-042

Pathogenicity and tissue tropism of Korean TC0702-like avian infectious bronchitis virus inchickens

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Introduction: Infectious bronchitis virus (IBV) is a highly contagious respiratory pathogen of chicken and cause significant economic loss due to poor production performance in poultry industry around the world. A novel genotype of IBV (TC0702 like) were first detected in broilers with respiratory illness (isolate TC07-02) in Guangdong province, China in 2007 and two years later also isolated from commercial chickens in Japan and Korea. In the study, we isolated TC0702-like IBV from a commercial broiler flock with respiratory illness. Pathogenicity and tissue tropism of the Korean TC0702-like IBV were evaluated using specificpathogen free (SPF) chickens.

Materials and Methods: Korean field isolate (KrD1515) of IBV, belonging to TC0702-like genotype, was used in the study. A total of 40 seven day-old SPF chickens were randomly divided into two groups of 20 birds and housed in aseparate isolator equipped with air filter. Chicks in group I were inoculated oculonasally with 0.1ml ($10^{6.5}$ EID_{50}per dose) of the KrD1515 virus while group II chicks were inoculated oculonasally with the same volume of phosphate buffered saline (PBS) as acontrol. Clinical signs were daily observed and recorded for 21 days after challenge. Oral and cloacal swabs were collected on day 3, 5, 7, 9 and 14 pc for virus detection by RT-PCR. On day 3, 7 and 14 post challenge (pc), three chicks per group were randomly selected and humanely sacrificed. On day 21 post challenge, all remaining chicks were humanely euthanized. At post-mortem examination, gross lesions were examined. Trachea, lung, proventriculus and cecal tonsil were collected from sacrificed chicks for virus detection byRT-PCR and histopathology.

Results: Seven day-old SPF chickens were challenged with KrD1515 virus. All challenged birds showed respiratory signs starting from 5 days pc until 14 days pc and later almost were recovered. Other clinical signs such as diarrhea were not observed in challenge group during experiment. However, mock-infected group showed no clinical signs during the experiment. In challenge group, ciliary activity on trachea was stopped completely in all birdsexcept for one (score 1 at 3 dpc) on day 3 and 7 pc and then recovered normalon day 14 pc. On day 3 and 7 pc, all the birds showed severe tracheal lesions including loss of cilia and epithleial cells, degeneration of epithelialcells, hyperplasia of epithelial cells and inflammatory cells infiltration on the surface and lamina propria. The tracheal lesions were mild on day 14 pc and recovered completely on day 21 pc. However, mock-infected group showed no obvious tracheal lesions during the experiment. Challenge virus was detected in oral swab from days 3 to 9 pc, trachea from days 3 to 14 pc, lung from days 3 to 21pc, proventriculus from days 3 to 7 pc, kidney from days 3 to 21 pc, caecal tonsil from days 7 to 21 pc, and clocal swab on day 7 pc alone. No virus was detected in mock-infected group during the experiment.

Conclusions: In the study, pathogenicity and tissue tropism of the Korean TC0702-like IBV were evaluated using SPF chickens. All birds challenged with the KrD1515 virus showed severe respiratory signs and tracheal lesions but other clinical signs such as diarrhea were not observed during the experiment. The virus shed longer through oral route than cloacal secretions. Our results indicate that KrD1515 virus has respiratory tropism in chickens.

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P-043

Complete genome sequence of *Vibrio coralliilyticus* 58 isolated from Pacific oyster (*Crassostrea gigas*) larvae

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Introduction: *Vibrio coralliilyticus* has been identified as the causative agent of coral bleaching and bacillary necrosis in oysters. *V. coralliilyticus* 58, formerly reported as *V. splendidus* biovar II 58, was originally isolated from inactive Pacific oyster (*Crassostrea gigas*) larvae in Japan.

Materials and Methods: Genomic DNA was sequenced using the PacBio RS II system. The complete genome was annotated and compared to the genomes from other *Vibrio* species. The predicted ORFs were assigned to functional categories using BLASTP searches of the Clusters of Orthologous Groups (COGs) database, and the presence of virulence genes were identified.

Results: The fully assembled and closed *V. coralliilyticus* 58 genome comprised 5,490,011 bp, consisting of two chromosomes named Chr I (3,504,421 bp) and Chr II (1,917,481 bp) and a single plasmid designated pVs58 (52,449 bp). The virulence-associated *cytolysin/hemolysin* and *metalloprotease* genes were present on the chromosomes of strain 58. In addition, the former was also detected on plasmid pVs58, suggesting that this virulence plasmid may also be associated with the pathogenicity of V. coralliilyticus.

Conclusions: These data will provide important insights into the biodiversity of this organism and valuable information for the study of virulence factors, facilitating the control of *V. coralliilyticus* infections in aquaculture.

P-044

Isolation and identification of *Moraxella cuniculi* from rabbit showing keratoconjuctivitis

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Introduction: Species of *Moraxella* has been reported as gram-negative bacteria giving rise to opportunistic infection in human and animals. The *Moraxella* species are short rods, coccobacilli, or as in the case of *Moraxella catarrhalis*, diplococci in morphology. *M. catarrhalis* is the clinically most important species among *Moraxella spp*. *Moraxella lacunata* is one of the causes of blepharoconjunctivitis in human. In veterinary field, *Moraxella bovis* is the cause of infectious bovine keratoconjunctivitis, known colloquially in many countries. As a strict aerobe, *M. bovis* is confined to the cornea and conjunctiva, resulting in a progressive, non self-limiting keratitis, ulceration, and ultimately rupture of the cornea. The disease is relatively common, infecting cattle only. We isolated and identified *Moraxella crucuni* from rabbit showing keratoconjunctivitis. In this study, we report the characteristics of the isolate (APQA1701 strain).

Materials and Methods: Isolation and identification: Swap samples were collected from rabbit with eye disease such as conjunctivitis and hyperplasia of the third eyelid. Four samples were obtained from two rabbits that were breed in Gyoungsangbuk-do in 2017. All samples were inoculated onto blood agar and incubated for 24 h at 37℃. The colonies were tested using gram staining, catalase and oxidase tests. Morphology of the isolate was observed by electronic microscope. Genomic DNA was extracted from the isolated colonies using a Genomic DNA extraction kit (Intron Co., Seongnam, Korea) and nucleotide sequence of 16S rRNA was obtained. **Antibiotic resistance:** Minimal inhibitory concentrations (MICs) were determined using the standard broth dilution methods described in the Clinical and Laboratory Standard Institute's (CLSI) guidelines for 27 antibiotics including amoxicillin/ clavulanic acid, ampicillin, penicillin, cefoxitin, ceftiofur, cephalothin, clindamycin, ciprofloxacin, danofloxacin, enrofloxacin, nalidixic acid, colistin, florfenicol, chloramphenicol, gentamicin, neomycin, streptomycin, spectinomycin, tetracycline, chlortetracycline, oxytetracycline, trimethoprim/ sulphamethoxazole, sulphadimethoxime, tiamulin, tilmicosin, tulathromycin, and tylosin.

Results: Pure three colonies were obtained from 4 samples showing conjunctivitis around eyelid of rabbit and their 16S