P-069

Evaluation of dermal absorption rates of propoxur using *in vitro* micro-pig dermal tissue model.

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In vitro dermal absorption rate of propoxur in food producing animals were investigated in this study for regulation's purpose. 20 μL of propoxur solutions were applied to the skins mounted on Franz diffusion cells. 50% ethanol-PBS solutions were taken after 1, 2, 4, 8, 12, 24, 48 and 72 hours in the trans-dermal diffusion cells (Franz cell). Dermal tissues, tape strips, washing solutions and washing swabs were taken at 72 hours of application. All samples were analyzed using LC-MS/MS. In 250 ppm group, 25.7% of applied propoxur was present in the receptor fluids and the residue in dermal tissue was only 0.27%. 4.31% of applied propoxur did not penetrate into the skin within 72 hours and washed off. In the 50 ppm treated group, the absorbed propoxur was mainly presented in the receptor fluids (18.6%) and the residue in dermal tissue was only 0.29%. The total absorption rate of propoxur in this in vitro test was 18.9±5.44% in 50 ppm, and 25.9% in 250 ppm after 72 hours application. The sum amount recovered in all analyzed samples was 96.6±26.5% in this study. These results could support to drafting regulations for food safety on veterinary drugs and pesticides.

P-070

Pharmacokinetic and pharmacodynamic evaluation of the efficacy of enrofloxacin in treating salmonella enteritidis infections in broiler chicken

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The resistance to fluoroquinolones is a main subject for the use of antibiotic substances in veterinary medicine where the overuse and misuse of antibiotics is a major cause of resistance. Optimizing the dose and dose intervals are essential for achieving clinical cures and minimizing the emergence of fluoroquinolones resistance. The purpose of this study was to evaluate pharmacokinetic/pharmacodynamic (PK/PD) parameters for the establishment of a reliable dosage of enrofloxacin against Salmonella enteritidis in chickens.

P-071

Gut Microbiome of Sacbrood Virus (SBV)-infected *Apis cerana* Honeybee and Larvae

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Sacbrood virus (SBV), which infects honeybee larvae, results in failure to pupate and death, while adult honeybee did show little clinical signs by SBV infection. Meanwhile, gut microbiome of honeybee is known to be supportive for host nutrition and defense against detrimental pathogens. Therefore, it is thought that the difference of gut microbiome between adult honeybee and larvae could effect on the susceptibility of SBV infection. In this study, the bacterial communities in the guts of the adults and larvae of SBV-infected *Apis cerana* honeybee in Korea was investigated by next-generation sequencing (NGS) approach to explore correlation of gut microbiome and SBV-infection. The numbers of operational taxonomic units (OTUs) were much lower in the SBV larval guts than in the SBV adult guts. *Proteobacteria, Firmicutes* and *Bacteroidetes* dominate the SBV adult honeybee guts (54.4%, 25.9% and 16.6%, respectively), while *Proteobacteria* dominate the SBV larvae guts (99.7%). Most of the adult honeybee gut bacterial 16S rRNA gene sequences were highly similar to the known honey bee-specific ones and affiliated with *Orbaceae* (52.9%), *Lactobacillaceae* (25.8%) or *Flavobacteriaceae* (16.5%). Unlike adult guts, most of the larvae gut bacterial 16S rRNA gene sequences were affiliated with *Orbaceae* (99.3%). The results substantiated the previous observation that SBV-susceptible honeybee and larvae guts was dominated by several specific bacterial groups, and also showed that the relative abundances of OTUs could be markedly changed depending on the developmental stage of the honeybee and larvae.

P-072

Analysis of percutaneous absorption rates of bifenthrin using in vitro micro-pig dermal tissue model.

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It has been widely known that the skin can be an important route of absorption for pesticides. As the guidelines of in vitro skin absorption studies have been drafted by OECD to predict skin absorption rate in human, we intended to measure the in vitro absorption rate of bifenthrin, a widely used pesticide in laying hen farms to predict the pesticides residues in laying hens. 1000 ppm and 100 ppm of bifenthrin were applied to the micropig's skins mounted on franz diffusion cells. 50% ethanol-PBS solution in receptor fluid was taken after 1, 2, 4, 8, 12, 24, 48 and 72 hours of application and dermal tissues, tape strips, washing solutions and washing swabs were taken for analysis at 72 hours after application. In the 1000 ppm treated group, total absorption rate was 18.7±5.39%. 6.03%, 12.6% and 39.0% of applied dose were found in receptor fluids, dermal tissues, and washing materials, respectively. In the 100 ppm group, total absorption rate was 8.50±2.68% and 20.6% of applied bifenthrin did not penetrate into the skin and washed out after 72 hours. The sum amount recovered in all analyzed samples was 54.2±11.2% in this study. In this study, the absorbed bifenthrin was found mostly in skins after 72 hours of application. Although further studies are needed to improve the recoveries, these results could support to drafting regulations on food safety for using bifenthrin in laying hen farms.