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Oral	Topic	Speaker
1	Thermal inactivation of Newcastle disease virus in egg products	Phanlert Sakkaew
2	<i>Bartonella</i> spp. Detection in King Cobras' Ticks from King Cobra Village, Thailand using a SYBR Green real-time PCR.	Witasinee Srisanyong
3	The prevalence of blood parasites of livestock and detection of <i>Trypanosoma evansi</i> by PCR in western Thailand	Jasda Julagaiwansujarit
4	Oxytocin receptor in the bitch cervix: with special interest in the smooth muscle and cervical blood vessels	Nawarus Prapaiwan
5	Indigenous probiotic increased intestine's Cu,Zn-SOD in <i>Enteropathogenic E. Coli</i> (EPEC) infected rats	Tutik Wresdiyati
6	The treatment of <i>coccidia</i> sp. Infection by Trimethoprim Sulphamethoxazole in goat kid Genetic diversity of spike genes of porcine epidemic diarrhea virus in Thailand	Sukonya Leethongdee
7	Filed Epidemiological Investigation on Goat Brucellosis in Nakhon Pathom Province, Thailand	Piyanat Prasomsri
8	Application of statistical process control methods for monitoring bulk tank milk somatic cell counts of dairy farms	Veerasak Punyapornwithaya
9	Prevalence and associated factors of bovine anaplasmosis in District Khanewal, Punjab, Pakistan	Muhammad Sohail Sajid
10	NSP2 gene characterization of Thai PRRSV after the 2010 HP-PRRSV outbreak	Korakrit Poonsuk
11	Lower level of interleukin -10 in pigs vaccinated with modified live prsv vaccine of type i genotype compared to that of type ii genotype	Suraphan Boonyawatana
12	Genetic diversity of spike genes of porcine epidemic diarrhea virus in Thailand	Gun Temeeyasen
13	Dogs and dog-associated people in Thailand shared the same methicillin-resistant <i>Staphylococcus pseudintermedius</i> and <i>S. aureus</i> strains	Patrrarat Chanchaithong
14	Impairment of hematopoiesis by persistently BVDV infection in Thai Dairy Calves	Atchara Poopuak
15	Molecular diagnosis for African swine fever virus infection: an emerging disease in Thailand	Yuttamol Muangkram

A041-SM009 Indigenous probiotic increased intestine's Cu,Zn-SOD in *Enteropathogenic E. Coli* (EPEC) infected rats

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Introduction

It was reported that probiotics to have a favorable influence on physiological processes of the host by their effect on intestinal flora (1). Probiotic also reported increased intestinal immune system (2). The objective of this study was to analyse the influence of indigenous probiotic *Lactobacillus fermentum* and *Lactobacillus plantarum* on the content of antioxidant superoxide dismutase (SOD) in the small intestine of *Enteropathogenic E. coli* (EPEC)-infected rats.

Materials and Methods

Indigenous probiotic, *L. fermentum* and *L. plantarum*, were isolated from meat at traditional markets in Bogor, West Java, Indonesia. A total of 90 male rats (*Sprague Dawley*) were used in this study. They were divided into 6 groups; negative control group (A), *L. plantarum* treated group (B), *L. fermentum* treated group (C), *L. plantarum* and EPEC treated group (D), *L. fermentum* and EPEC treated group (E), and EPEC infected group (F). The treatments of indigenous probiotics were done for 21 days, except group A and F. Group D, E, and F were infected with EPEC for 7 days, at 8th day to 14th day. Smooth intestine tissues were processed using paraffin embedding standard method. The tissues sections were stained immunohistochemically using antibody monoclonal copper, zinc-superoxide dismutase (Sigma S2147) and chromogen diaminobenzidine.

Results and Discussion

Copper, zinc-superoxide dismutase (Cu,Zn-SOD) was localized immunohistochemically in mucosa, submucosa, and tunica muscularis of rats smooth intestine. The results showed that *L. fermentum* treatment for 1 week increased the content of antioxidant Cu,Zn-SOD in the rats duodenum, jejunum, and ileum, while *L. plantarum* treatment for 1 week could not increase the antioxidant in the smooth intestine. Treatments of *L. fermentum* for 2 to 3 weeks increased the content of antioxidant Cu,Zn-SOD in the rats duodenum, jejunum, and ileum of both EPEC infected and without infected rats. *L. plantarum* treatments for 2 to 3 weeks also increased content antioxidant Cu-Zn-SOD in smooth intestine of without EPEC infected rats. In EPEC infected rats, *L. plantarum* treatments showed maintained the content of SOD.

As a response under infection condition, monosit increased cytokine interleukin-6 (IL-6) and tumor necrosis factor- α (TNF- α) production. Li *et. al.* (3) reported these cytokine could modulate supplying copper (Cu) and zinc (Zn), that play an important role in forming and activating enzyme Cu,Zn-SOD. So, probiotic may increase the

activity of enzyme Cu,Zn-SOD, as reported by Zubillaga *et al.* (4) that probiotic increased expression of superoxide dismutase enzyme. It was also reported that *L. fermentum* produced exopolysaccharide (EPS) (5). EPS reported decreased oxidative stress (6).

This study concluded that the treatment of indigenous probiotic *L. fermentum* gave better effect in increasing the content of antioxidant Cu,Zn-SOD in the smooth intestine of rats than that of *L. plantarum*.

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