Effects of Antimicrobial Peptides Surfactin Administration on Growth Performance, Intestinal Digestive Enzymes Activities and Some Serum Biochemical Parameters of Orange-spotted Grouper (*Epinephelus coioides*) Juveniles

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**Keywords:** Surfactin; orange-spotted grouper; growth, digestive enzymes; serum biochemical parameters

**Abstract**
This trial was conducted to investigate the effects of dietary surfactin supplementation on the growth performance, intestinal digestive enzyme activities, and some serum biochemical parameters of orange-spotted grouper (*Epinephelus coioides*) juveniles. Three hundred and sixty fish were randomly divided into six treatment groups with four replicates in each group and 15 fish in each replicate. The dietary surfactin levels of four treatment groups were 0 (control group), 25, 50, 100, 150, and 200 mg/kg, respectively. The trial period was 8 weeks. Compared with the control group, final body weight, weight gain rate, and feed conversion ratio were improved significantly by 100 mg/kg surfactin supplementation (P<0.05). No significant differences of feeding rate and survival rate were found between the control group and all surfactin supplementation groups (P>0.05). Protease and lipase activity in intestine of 50, 100, and 150 mg/kg surfactin supplementation groups were significantly higher than those of the control group (P<0.05). Amylase activity was not affected significantly by surfactin supplementation (P>0.05). The blood urea nitrogen levels, and acid phosphatase and alkaline phosphatase activity in 100, 150, and 200 mg/kg surfactin supplementation groups were significantly ameliorated (P<0.05). The albumin level of 100 mg/kg surfactin supplementation group was significantly higher than that of the control group. Lysozyme activity of 50, 100, and 150 mg/kg surfactin supplementation groups was significantly higher than the control group (P<0.05). In conclusion, we demonstrated a promotion of growth performance and improvement of intestinal digestive enzyme activity, and some serum biochemical parameters of the orange-spotted grouper juveniles by appropriate surfactin levels supplemented in diet.

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