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乳铁蛋白素B和天蚕素P1对投喂大肠杆菌断奶仔猪生长及肠道微生物区系的影响

(1.天津市畜牧兽医研究所，天津300112；2.中国科学院亚热带农业生态研究所，
长沙410125；3.德国家畜生物研究所，Dummerstorf D-18196)

Effects of Lactoferricin B and Cecropin P1 on Growth and Gut Microflora in Weaned Pigs Challenged with Enterotoxigenic Escherichia coli

(1. Tianjin Institute of Animal Husbandry and Veterinary Science, Tianjin 300112, China; 2. Institute of Subtropical and Agricultural Ecology, Chinese Academy Sciences, Changsha 410125, China; 3. Leibniz Institute for Farm Animal Biology, Dummerstorf D-18196, Germany)

摘要 本研究旨在探讨投喂大肠杆菌后乳铁蛋白素B(Lfcin B)和天蚕素P1 (Cec P1)对断奶仔猪生长及肠道微生物区系影响。选用48头28日龄断奶的德国大白杂交二代断奶仔猪[（7.18±1.32） kg]，根据体重、窝别、性别将其随机分成4组：对照组、产肠毒素组（ETEC）、乳铁蛋白素组（Lfcin B）、天蚕素组（Cec P1），每组2个重复，每个重复6头猪，试验期为12 d。结果表明，1）试验期间对照组、ETEC组、Lfcin B组、Cec P1组仔猪体重及平均日增重均差异不显著（P>0.05）。2）ETEC组仔猪腹泻率显著高于其他组（P<0.05），而其他组之间差异不显著（P>0.05）。在进行第1次攻毒后，即仔猪29日龄，ETEC组、Lfcin B组和Cec P1组仔猪的粪便干物质均显著下降（P<0.05），第2次攻毒后的第2天，即仔猪31日龄，Lfcin B组和Cec P1组的仔猪分别饲喂了Lfcin B和Cec P1，对照组仔猪的粪便干物质仍显著高于ETEC组和Lfcin B组（P<0.05），但已与Cec P1组差异不显著（P>0.05）。3）各组仔猪的肠道微生物区系差异不显著（P>0.05）。由此可知，各组仔猪生长及肠道微生物区系差异不显著，但Cec P1来源于猪肠道微生物寄生线虫，比Lfcin B更能适应肠道环境，更有利于仔猪健康。

关键词： Lfcin B Cec P1 ETEC 断奶仔猪 肠道 微生物区系

Abstract： This experiment was conducted to study the effects of lactoferricin B (Lfcin B) and cecropin P1 (Cec P1) on growth and gut microflora in weaned piglets after orally challenged with enterotoxigenic Escherichia coli (ETEC). Forty-eight 28-day-old German Landrace×German Landrace weaned piglets with average body weight of (7.18±1.32) kg were randomly assigned to four dietary treatments (the control, ETEC, LfcinB, Cec P1) with two replicates per treatment and six pigs per replicate. The feeding trial lasted for 12 days. The results showed as follows: 1) there were no significant differences in body weight and average daily gain among control, ETEC, Lfcin B and Cec P1 group (P>0.05). 2) The incidence of diarrhea in ETEC group was significantly higher than that in the other groups (P<0.05), but there was no significant difference among control, Lfcin B and Cec P1 group (P>0.05). After challenged with ETEC firstly, the content of dry matter in feces of 29-day-old weaned piglets in ETEC, Lfcin B and Cec P1 group was significantly decreased (P<0.05), and after challenged with ETEC secondly, the content of dry matter in feces of 31-day-old weaned piglets in ETEC and Lfcin B group was still significantly lower than that in the control group (P<0.05), but there was no significant difference between the control group and Cec P1 group. 3) There was no significant difference in gut microflora among all groups (P>0.05). In conclusion, there are no significant differences in the growth and gut microflora of weaned piglets among the control, ETEC, Lfcin B and Cec P1 group, however, because Cec P1 is separated from nematode Ascaris suum of gut microbe in pigs, it lives more easily in the gut than Lfcin B, and it is more favourable to the health of piglets. [Chinese Journal of Animal Nutrition, 2011, 23 (9) : 1536 -1544]

Keywords： Lfcin B, Cec P1, ETEC, weaned piglet, gut, microflora

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作者简介：侯振平（1978—），女，河南扶沟人，助理研究员，博士，主要研究方向为微生物与营养。E-mail: hzp2006@126.com

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