

# Effects of antibiotics on intestinal immunity in broilers <sup>(1)</sup>

Ching-Chi Hung <sup>(2)</sup>, Bao-Ji Chen <sup>(3)</sup>, Ching-Yi Chen <sup>(3)</sup>, Ying-An Chu <sup>(3)</sup>,  
I-Nung Huang <sup>(3)</sup> and Chin-Bin Hsu <sup>(2)(4)</sup>

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## Abstract

This study was to investigate the effect of antibiotics on intestinal immune response. One hundred and ninety-two broilers were randomly allocated to 4 treatments with 4 replicates of 12 birds each. The 4 treatments were: control, bacitracin 55 ppm, nisin 2.5 ppm, and oxytetracycline 55 ppm supplements. Intestinal mucosal immunity was measured at 3 and 6 wk of age. In the intestinal mucosal immunity, the nisin supplemented group significantly decreased the expression of mucosal antimicrobial lysozyme level at 3 weeks of age ( $P < 0.05$ ), but had no effect on the bacitracin and oxytetracycline groups. The three antibiotic supplements had no significant differences in T cell receptor  $\gamma\delta$ , ileum and lymphocyte proliferation of blood. The nisin supplementation group had lower blood IgA levels ( $P < 0.05$ ) at 6 wk of age, but did not affect the bacitracin and oxytetracycline groups. Antibiotic administration did not alter plasma IgG and IgM at 6 wk of age. In conclusion, different antibiotics may be inconsistent in immune regulation. Supplementation of nisin in chicken diets modulates the immune response of chickens by downregulating lysozyme and IgA.

Key words: Antibiotics, Broilers, Intestinal immunity,  $\gamma\delta$  T cell receptor.

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(1) Contribution No. 2739 from Livestock Research Institute, Council of Agriculture, Executive Yuan.

(2) Nutrition Division, COA-LRI, Tainan 71246, Taiwan, R. O. C.

(3) Department of Animal Science and Technology, National Taiwan University, No. 50, Lane 155, Sec. 3, Keelung Road, Taipei 106, Taiwan, R. O. C.

(4) Corresponding author, E-mail: cbhsu@mail.tlri.gov.tw.