Developmental expression of LTβR and differential expression in Escherichia coli F18 resistant/sensitive piglets

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ABSTRACT. We analyzed LTβR mRNA expression in piglets from birth to weaning and compared the differential expression between Escherichia coli F18-resistant and sensitive populations to determine whether this gene could be used as a genetic marker for E. coli F18 resistance. Sutai piglets of different age groups (8, 18, 30, and 35 days; N = 4 each) and piglets demonstrating resistance/sensitivity to E. coli F18 were used. LTβR expression levels were determined by real-time PCR. The LTβR expression levels in the lymph node, duodenum, and jejunum were significantly higher in 8-day-old piglets than in the other age groups (P < 0.01), and the expression levels were significantly
higher in the lungs of 8-day-old piglets than in 35-day-old piglets (P < 0.01) and 30 day-old piglets (P < 0.05). In liver tissue, the expression level was significantly higher in the 35-day-old piglets than in other age groups (P < 0.01). In the stomach tissue, the expression level was significantly higher in 35-day-old piglets than in 18-day-old piglets (P < 0.05). LTβR expression in the lymph nodes was significantly higher in the resistant group than in the sensitive group (P < 0.01), but there was no significant difference in the other tissues (P > 0.05). These results indicate that 8 days after birth is a crucial stage in the formation of mesentery lymph nodes and immune barriers in pigs, and increased expression of LTβR may be beneficial for developing resistance to *E. coli* F18.

**Key words:** Pigs; LTβR gene; *E. coli* F18; mRNA