



Differential expression of *FUT1* and *FUT2* in Large White, Meishan, and Sutai porcine breeds

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ABSTRACT. To assess the relationship between the expression of $\alpha(1,2)$ -fucosyltransferase (*FUT1* and *FUT2*) genes and resistance to *Escherichia coli* F18 in weaned pigs, *FUT1* and *FUT2* expression levels in Large White, Meishan, and Sutai pigs (with resistance to *E. coli* F18) were determined using real-time PCR. The results revealed that *FUT1* and *FUT2* expression levels were higher in the liver, lungs, kidneys, stomach, duodenum, and jejunum than in the muscle and heart. Medium *FUT2* expression levels were detected in the spleen, thymus, and lymph nodes. Intestinal *FUT1* expression levels were higher in Sutai pigs than in Large White and Meishan pigs ($P < 0.05$). However, intestinal *FUT2* expression levels were lower in Sutai pigs than in Large White and Meishan pigs ($P < 0.05$). *FUT1* and *FUT2* expression levels did not differ between Large White and Meishan pigs ($P > 0.05$). The results revealed that high *FUT1* expression levels and low *FUT2* expression levels in the intestines of Sutai

pigs affected FUT1 and FUT2 enzymes, the synthesis of type 2 H and type 1 H antigens, and *E. coli* F18 adhesion. Moreover, low *FUT2* expression levels conferred resistance to *E. coli* F18.

Key words: Pig; *FUT1*; *FUT2*; mRNA expression