



Developmental changes in IGF-I and MyoG gene expression and their association with meat traits in sheep

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ABSTRACT. In the present study, real time-polymerase chain reaction was applied to analyze the expression of IGF-I and MyoG genes in Hu sheep longissimus dorsi at different growth stages and their association with meat traits. Expression of the IGF-I gene in Hu sheep differed significantly between males and females at the two day-old ($0.01 < P < 0.05$), one-month old ($0.01 < P < 0.05$), and three month-old ($P < 0.01$) stages. IGF-I gene expression in male longissimus muscles was higher than that of females at all growth stages, except for the three month-old stage. There was no significant difference ($P > 0.05$) between males and females at any growth stage in expression of the MyoG gene. MyoG gene expression in male longissimus muscles tended to be higher than that of females at all growth stages, except for the six month-

old stage. IGF-I gene expression was significantly and positively correlated with live weight ($P < 0.01$) and carcass weight ($0.01 < P < 0.05$), and was non-significantly positively correlated with net meat weight ($P > 0.05$). In contrast, MyoG gene expression was non-significantly and positively correlated with live weight, carcass, and net meat weight ($P > 0.05$). Carcass traits showed highly significant positive correlations ($P < 0.01$). Furthermore, expressions of IGF-I and MyoG genes showed highly significant positive correlations ($P < 0.01$). We conclude that the expressions of IGF-I and MyoG genes are significantly and positively correlated with early muscle traits of Hu sheep.

Key words: Hu sheep; IGF-I; MyoG; Gene expression; Carcass trait