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# Association between *DLK1* and *IGF-I* gene expression and meat quality in sheep

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**ABSTRACT.** The aim of the present study was to detect delta-like 1 homolog (*DLK1*) and insulin-like growth factor-I (*IGF-I*) gene expression in the longissimus dorsi of Hu sheep at different growth stages and study the association between these genes and meat quality. The diameter and density of muscle fibers and tenderness of the longissimus dorsi were measured. Growth stage, but not sex, significantly affected *DLK1* and *IGF-I* expression. *DLK1* and *IGF-I* expression in the sheep longissimus dorsi gradually increased with growth, but also decreased during some periods. These results suggest that different growth stages significantly affect *DLK1* and *IGF-I* gene expression in sheep muscle tissue. The expression of *DLK1* and *IGF-I* genes were positively and significantly ($P < 0.01$) correlated with muscle fiber diameter and muscle fiber shear stress, and negatively and significantly ($P < 0.01$) correlated with muscle fiber density. Muscle fiber diameter was positively and significantly ($P < 0.01$) correlated with muscle fiber shear stress, and negatively and significantly ($P < 0.01$) correlated with muscle fiber density. In addition,

 

DLK-1 expression was significantly ($P < 0.01$) and positively correlated with *IGF-I* expression.

**Key words:** *DLK1*; Gene expression; Hu sheep; *IGF-I*; Muscle trait

 