



Expression analysis of *Gli1* and *Gli2* in different tissues and muscle-derived cells of Qinchuan cattle

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ABSTRACT. The Hedgehog (Hh) signaling pathway regulates the differentiation of many kinds of cells and plays a critical role in many embryonic and postnatal developmental processes. *Gli1* and *Gli2* are two transcription factors of the Hh signaling pathway. In this study, we used quantitative real-time polymerase chain reaction to detect the relative expression of *Gli1* and *Gli2* in 13 tissues from three two-year-old purebred Qinchuan cattle, as well as in different cell populations derived from muscle and different stages of myogenic differentiation of myoblasts. The expression levels of *Gli1* and *Gli2* in muscle were the lowest of the 13 tissues ($P < 0.05$), and they declined predominantly from preplate (pp)1 to pp6 cells. However, the expression of *Gli2* was elevated during myogenic differentiation until the 6th day. We speculated that Hh signaling was negatively activated in myocytes and quiescent myoblasts. The increased expression of *Gli1* and *Gli2* in the early days of myogenic differentiation suggested that Hh signaling would be activated when the quiescent bovine myoblast was stimulated

to initiate myogenic differentiation.

Key words: Hedgehog signaling pathway; Myogenic differentiation; Myoblast; Quantitative real-time polymerase chain reaction