



Sex- and age-dependent expression of *Pax7*, *Myf 5*, *MyoG*, and *Myostatin* in yak skeletal muscles

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ABSTRACT. The aim of this study was to investigate the myogenic factor mRNA expression pattern of *Pax7*, *Myf5*, *MyoG*, and *Myostatin* mRNA at different ages, sexes, and muscle tissues of Datong yaks. The expression patterns in semimembranosus (SM), quadriceps femoris (QF), and triceps muscle of arm (TM) were detected by quantitative real-time polymerase chain reaction and compared using biostatistics. The results showed that the *Pax7* gene expression levels were higher in the hindquarters (SM and QF) than in the forequarters, and was higher in male compared to in female muscle ($P \leq 0.05$). The *Myf5* gene expression levels of male yaks were highest in QF ($P \leq 0.05$), whereas the expression levels of female yaks were highest in TM ($P \leq 0.05$). Female *MyoG* gene expression levels were higher in QF and TM compared to in male yaks. The *MyoG* expression was higher in all muscles at 6 months old compared to in 3-year-old muscle. The

highest *MSTN* gene expression was found in 6-month-old TM muscle and in QF muscle of 3 years ($P \geq 0.05$). In conclusion, yak muscles showed different growth patterns depending on position. At 6 months of age, the satellite cells in the male hindquarter muscles and the female forequarter muscle showed a strong proliferative ability, at the same time the satellite cells in all female muscles had a powerful differentiation ability. Hindquarter muscles appear to mainly grow at younger ages and forequarters mainly grow at older ages.

Key words: Myogenic factor; Sex; Age; Expression pattern