



# Association analysis of *IGF-I* gene expression with growth and reproductive traits in Jinghai yellow chickens

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**ABSTRACT.** The insulin-like growth factor, IGF-I, plays an important role in the development of growth and reproductive traits. Single-strand conformation polymorphism analysis was used to detect and analyze polymorphisms and expression profiles of the *IGF-I* gene and its association with growth and reproductive traits of Jinghai yellow chickens. A point mutation g.295T>C was detected in the *IGF-I* gene

with three genotypes CC, CT, and TT. The CT and TT genotypes were found to be significantly ( $P < 0.05$ ) superior to the CC genotype in 8-, 10-, 12-, 14-, and 16-week-age weight of chickens (for growth traits) and in body weight at first egg-laying (for reproductive traits). Comparison of the expression level between males and females showed similarity in their expression curves, with females showing relatively higher *IGF-I* expression than males in all studied tissues. A similar *IGF-I* expression pattern was observed in the breast and leg muscles of both males and females, with the leg muscle showing relative higher *IGF-I* expression than the breast muscle. Our results indicate that, g.295T>C mutation in the *IGF-I* gene affects certain growth and reproductive traits, and it could be used to provide a theoretical basis as well as marker-assisted selection to upgrade the development of Jinghai yellow chickens in future.

**Key words:** Jinghai yellow chicken; Growth traits; Reproductive traits; Single nucleotide polymorphism