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## Genotypic Frequency in Asian Native Chicken Populations and Gene Expression Using Insulin-like Growth Factor 1 (*IGF1*) Gene Promoter Polymorphism

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A single nucleotide polymorphism (SNP) site, alleles *A* and *C*, within promoter region of *insulin-like growth factor 1* gene (*IGF1*) showed significant association with chicken growth, body composition and skeletal traits. In the present study, we performed genotyping of this SNP in Asian native chicken populations, layer and broiler populations using PCR-RFLP and comparison of gene expression level and growth traits among the SNP genotypes. By the PCR-RFLP, allele *C* frequency was estimated to be within the range of 0.64-1.00 in 12 Asian native chicken populations, 0.48-1.00 in eight layer stocks and 0.00-0.14 in two broiler stocks examined in this study. In all chicken populations, the observed number of each SNP genotype was in good agreement with the Hardy-Weinberg expectations. Body weight (BW), average daily gain (ADG), growth rate and *IGF1* gene expression level in three-week liver were compared among three SNP genotypes obtained by *AC*×*AC* crossing. The rankings of each genotype with respect to BW, ADG and growth rate were *AA*>*AC*>*CC*, and statistical significance ( $P<0.05$ ) was found within *AA* and *CC* in BW and ADG. The rankings of each genotype with respect to the *IGF1* gene expression level was *AC*>*AA*>*CC*. Although we could not find statistically significant difference among the genotypes in the growth rate and the gene expression level, the mean values of *CC* were

lower than those of AA in all traits.

**Keywords:** [chicken](#), [gene expression](#), [insulin-like growth factor 1](#), [liver](#)

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