

Relationship of the myostatin gene with the chemical body composition of common carp (*Cyprinus carpio*)

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Corresponding author:**Naser A. Saleh****ABSTRACT:**

This study was undertaken at the college of Agriculture, University of Baghdad, Department of Animal Production/Fish Laboratory from 18.10.2017 to 10.1.2018 to determine the polymorphism of myostatin gene, and its relationship with the chemical body composition in 68 samples of common carp (*Cyprinus carpio*). Results of sequencing and Single Nucleotide Polymorphism (SNP) showed three genotypes at site T2230C in the myostatin gene and the distribution percentage of genotypes were 5.88, 38.24 and 55.88% for the TT, TC and CC genotypes respectively, and the variation among these percentages were highly significant ($P < 0.01$). The allele frequency of T allele was 0.25, and C allele frequency was 0.75, where the effect of myostatin gene genotype was significant ($P < 0.05$). Results of the study showed that most of the body composition ratios were significantly affected by the different genotypes of the myostatin gene, where CC Genotype was higher and the protein ratio was 16.25%, fat was low with 4.12%, ash 1.76% and humidity ratio 79.60 % compared to the other genotypes TT and TC. The study summarized that it is possible to adopt the polymorphism of myostatin gene at the site T2230C in developing the genetic strategic improvement in fish to achieve the largest economic return from their breeding projects by selecting and crossing genotypes that have achieved best performance.

Keywords:

Common carp, Myostatin gene, Chemical body composition.