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## P0501: Investigation for High-Impact SNPs on Important Genes for Muscle Growth Characteristics in Broilers

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The study of candidate genes and mutations is necessary to understand the biological processes and the genetic networks that control phenotypic traits of economic importance. The aim of this study was to find high-impact mutations in candidate genes for muscle growth and development traits in a Brazilian meat-type chicken population. For this, we used a dataset of 11 million SNPs found in 14 parental chickens of this population. After functional annotation, the SNPs predicted as high-impact and also annotated within QTLs for breast meat weight and percentage traits were kept. From the genes harboring these SNPs we selected those related with muscle development traits based on their gene ontologies. We identified important genes related to processes of cell division and proliferation. As an example, one of the QTLs previously identified by our group in this population was on GGA 26 (2 Mb) associated with breast meat weight. In this window, three important genes related to muscle development were found: *TRIM33*, regulating the transforming growth factors beta, *RHOC*, related with migration of satellite skeletal muscle cells and *OLFML3*, an important gene acting in multicellular development. All these genes exhibited high-impact SNPs and, therefore, are important candidates for muscular growth and development, cell division and proliferation. Further studies aiming to validate those variants and their effects are important for a better understanding of the molecular mechanisms involved in muscle development in chickens.

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