

Over-expression of *c/ebpα* gene in bovine muscle stem cell stimulates adipogenesis

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The intramuscular fats (IMF) or intramuscular triglycerides (*IMTG*) are present throughout the skeletal muscles. The IMF adds marbling, which is one of the critical criteria for judging the quality of meat cuts, and recently increased IMF in meat has become a focus particularly in the beef industry. The role of *CCAAT/enhancer binding protein alpha (C/EBPα)* gene in initiating the adipogenic program by over-expressing *C/EBPα* in bovine muscle stem cells (*MSC*) has been investigated in the present study in order to provide deep insights, that in-turn could be used to ameliorate beef quality by genetic means. Prior to this, bovine *MSC* were isolated and induction of their differentiation into adipocyte was tested in cells which were exposed to dexamethasone *IBMX* and indomethacin in the presence of insulin and fetal bovine serum. Either ectopic expression of *C/EBPα* or treatment with dexamethasone and insulin is capable of inducing accumulation of fat droplets and expression of adipogenic inducers genes (*LPL*, *PPARγ*, *C/EBPβ*, *C/EBPδ*). The myoblast related genes (*MyoD*, *Myf5*, and *Pax7*) expressions were also measured to assess the accuracy of the differentiation process. This work has provided evidence that *C/EBPα* gene is essential for cattle adipose tissue growth and development, information that could be used to improve beef quality.

Biography

Camus Adoligbe is a progressive and result-oriented person with major interest in the field of animal science focusing on scientific goals and development, community empowerment and Public-Private sector partnership through value chain analysis of scientific processes in order to eliminate inefficiencies. He got his Bachelor degree in Animal production from Abomey-Calavi University (Benin) and his Master degree in Animal Genetics and Breeding from Northwest A&F University (China). He is currently pursuing his Ph.D. in the same field. He is a promising scientist in the field of animal science to lay sound, practical and viable solutions through consultative approach. As per his publication status, he has already published 3 papers and he has others under review.

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