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Association between Polymorphism of Some Myogenic Regulatory Factors and Growth Traits in Bovine

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For the degree of Ph.D.

In Biochemistry and Chemistry of Nutrition

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Abstract: The *MyoD* family of myogenic regulatory factors (*MRFs*) include several genes such as Myogenin (*MyoG*) and Myogenic Factor 5 (*MYF5*) that have the potential to influence economically important traits in beef cattle. The objective of the present study were to estimate the allele and genotype frequencies of the (*MyoG*) and (*MYF5*) genes in cattle and buffalo in Egypt and to determine the effects of these polymorphisms on some growth traits in the studied breeds. Genomic DNA was extracted from whole blood of 200 animals including Friesian cattle and buffalo. PCR-SSCP technique was used to genotype (*MyoG*) and (*MYF5*). Three genotypes were determined for *MyoG*_exon-1 locus (BB, AB and AC) and two genotypes for *MyoG*_exon-1and intron-1 locus (AA and AB). Significant positive association were found between *MyoG*_exon-1 AB genotype in Friesian cattle with weight at 6 months (W6) and average daily gain (ADG). For *MyoG*_exon-1and intron-1 locus, the AA genotype showed positive effect on (ADG) in Friesian cattle. For MYF5 gene, exon-2 was monomorphic while three genotypes were determined for MYF5 intron-1 locus (BB, AB and AC) and four genotypes for intron-2 and exon-3 locus (AA, AB, AC and AD). Significant positive association was found between MYF5 intron-1 BB genotype in Egyptian buffalo with (W6) and (ADG). For intron-2 and exon-3 locus, the AD genotype in Friesian cattle and the AB genotype in Egyptian buffalo showed positive effect on (W6) and (ADG). These results could be included into marker assisted selection programs to improve the productivity in these breed

Key words: Myogenic regulatory factors; Myogenin; Myogenic factor 5; genotyping; growth traits; Friesian cattle; Egyptian buffalo.

DEDICATION

To the soul of:

The man who taught me that life is a message written only by belief in ALLAH and communicated by work and patience my ever loving "Father"

To her:

The lady with the strength of a warrior, the mercy of an angel, the mind of scientist and the heart of artist my ever loving and caring "Mother"

To her:

My life partner and soul mate who share me the load and gave me the strength to bear any difficulties my ever loving and caring "Future Wife"

To them:

The partners who support me and gave me the love and assistance my ever loving and caring "Friends"

Acknowledgment

First and foremost, I would like to thank ALLAH. Praise is always and forever to god.

"Whoever does not thank people does not thank ALLAH"

*So I would like to express my gratitude and deepest thank to **Prof. Dr. El-Said Thabet Awad** Professor of Biochemistry and Chemistry of Nutrition, Faculty of Veterinary Medicine, Cairo University for his support, valuable supervision and encouragement.*

*Deep gratitude to **Prof. Dr. Samy Ahmad Abd El-Aziz**, Professor of Biochemistry and Chemistry of Nutrition, Faculty of Veterinary Medicine, Cairo University for his scientific supervision, kind encouragement, valuable guidance who played an important role in completion of this work,*

*My sincere thanks to **Prof. Dr. Mohamad Ali Ahmad Warda** Professor of Biochemistry and Chemistry of Nutrition, Faculty of Veterinary Medicine, Cairo University for his valuable spiritual and academic advise and for his continuous encouragement and subtle direction of my effort throughout the preparation of this thesis.*

*I would like to express my deepest thanks to **Prof. Dr. Said Zaki Mostafa**, Professor and head of Biochemistry and Chemistry of Nutrition, Faculty of Veterinary Medicine, Cairo University for his support, patience and encouragement.*

*I would like to express my deepest thank to **Dr. Abdelbary prince** lecturer of Biochemistry and Chemistry of Nutrition, Faculty of Veterinary Medicine, Cairo University for his support and encouragement.*

And lastly, I would like to express my deep thanks to all members of Biochemistry and Chemistry of Nutrition, Faculty of Veterinary Medicine, Cairo University.

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