

Table of Contents

In Press

Article Archive

[CJAS \(63\) 2018](#)[CJAS \(62\) 2017](#)[CJAS \(61\) 2016](#)[CJAS \(60\) 2015](#)[CJAS \(59\) 2014](#)[CJAS \(58\) 2013](#)[CJAS \(57\) 2012](#)[CJAS \(56\) 2011](#)[CJAS \(55\) 2010](#)[CJAS \(54\) 2009](#)[CJAS \(53\) 2008](#)[CJAS \(52\) 2007](#)[CJAS \(51\) 2006](#)[CJAS \(50\) 2005](#)[CJAS \(49\) 2004](#)[Issue No. 1 \(1-50\)](#)[Issue No. 2 \(51-92\)](#)[Issue No. 3 \(93-130\)](#)[Issue No. 4 \(131-176\)](#)[Issue No. 5 \(177-230\)](#)[Issue No. 6 \(231-278\)](#)[Issue No. 7 \(281-322\)](#)[Issue No. 8 \(323-372\)](#)[Issue No. 9 \(373-417\)](#)[Issue No. 10 \(419-464\)](#)[Issue No. 11 \(465-510\)](#)[Issue No. 12 \(511-548\)](#)

Editorial Board

Ethical Standards

Reviewers 2017

For Authors

Author Declaration

Copyright Statement

Instruction for Authors

Submission Templates

Fees

New Submissions/Login

Subscription

A relationship between the PCR-RFLP polymorphism in porcine *MYOG*, *MYOD1* and *MYF5* genes and microstructural characteristics of *m. longissimus lumborum* in Pietrain × (Polish Large White × Polish Landrace) crosses

D. Kłosowska, J. Kurył, G. Elminowska-Wenda, W. Kapela, K. Walasik, M. Pierzcha, D. Cieślak, J. Bogucka

<https://doi.org/10.17221/4286-CJAS>

Citation: Kłosowska D., Kurył J., Elminowska-Wenda G., Kapela W., Walasik K., Pierzcha M., Cieślak D., Bogucka J. (2004): A relationship between the PCR-RFLP polymorphism in porcine *MYOG*, *MYOD1* and *MYF5* genes and microstructural characteristics of *m. longissimus lumborum* in Pietrain × (Polish Large White × Polish Landrace) crosses. Czech J. Anim. Sci., 49: 99-107.

[download PDF](#)

Muscle fibre formation takes place during embryonic development and is regulated by the *MyoD* gene family, which consists of four genes, *MYOD1*, *myogenin*, *MYF5* and *MRF4*. A relationship was studied between *MYOD1*, *myogenin* and *MYF5* genotypes and microstructural characteristics of the *m. longissimus lumborum* in pigs – crosses: Pietrain × (Polish Large White × Polish Landrace). The data included 115 unrelated animals slaughtered at about 105 kg live body weight. Within 45 min after exsanguination, samples were taken from the *m. longissimus lumborum*, frozen in liquid nitrogen and later analysed for the diameter of slow-twitch oxidative, fast-twitch oxidative and fast-twitch low-oxidative fibres, their proportion in a bundle, the proportion of pathological changes and number of fibres per unit area. The *RYR1* and *MyoD* genotypes were determined using the PCR-RFLP technique. A significant or highly significant relation was observed between the diameter of all types of muscle fibres and genotype *RYR1* – the highest values were recorded for homozygotes *TT* (genetically stress-sensitive). A relation between *MyoD* genotypes and microstructural characteristics of the *m. longissimus lumborum* was analysed on a group of 93 animals of the genotype *CC* or *CT* at locus *RYR1*. Sex appeared to have no significant effect on the muscle microstructural traits in this group of animals. The content of fast-twitch oxidative fibres (FTO) was significantly related to the *MYF5* genotype, whereas that of fast-twitch low-oxidative fibres (FT) was affected by the *MYOD1* and *MYF5/Dde1* genotypes. The proportion of angular fibres in a bundle was related to *MYF5/Hinf1* genotype. The results showed that *MyoD* genes could be considered as candidate genes for some microstructural characteristics of *m. longissimus lumborum* in pigs.

Keywords:

MyoD genes; muscle fibres; pig; muscle microstructure

[download PDF](#)
IF (Web of Science)

2017: **0.955**

5-Year Impact Factor: **1.06**
Q3 (33/60) – Agriculture, L
 Animal Science
SJR (SCOPUS)
 2017: **0.443 – Q2** (Animal &
 and Zoology)

 Share

New Issue Alert

Join the journal on [Facet Abstracted / Indexed in Agrindex of AGRIS/FAO or Animal Breeding Abstracts CAB Abstracts CNKI Current Contents®/Agric Biology and Environment Sciences Czech Agricultural and F Bibliography DOAJ \(Directory of Open Journals\) Food Science and Techn Abstracts Google Scholar ISI Web of Knowledge® J-Gate Science Citation Index Ex SCOPUS TOXLINE PLUS Web of Science®](#)

Licence terms

All content is made freely for non-commercial purposes. Users are allowed to copy, redistribute, transform, and build upon material as long as they credit the source.

Open Access Policy

This journal provides immediate open access to its content on the principle that making research freely available to the public supports a greater global exchange of knowledge.

Contact

Ing. Gabriela Vladysková
 Executive Editor (Editorial publication)

e-mail: cjas@gazv.cz

Ing. Kateřina Kheilová
 Executive Editor (submission editorial system)

e-mail: cjas@af.czu.cz

Address

Czech Journal of Animal Science
 Czech Academy of Agricultural Sciences
 Slezská 7
 120 00 Praha 2
 Czech Republic