

研究论文

### 猪部分内脏器官性状和乳头数的QTL检测

张敬虎<sup>1,2</sup>, 熊远著<sup>1</sup>, 左波<sup>1</sup>, 雷明刚<sup>1</sup>, 蒋思文<sup>1</sup>, 李凤娥<sup>1</sup>, 郑嵘<sup>1</sup>, 李家连<sup>1</sup>, 徐德全<sup>1</sup>

1.华中农业大学畜牧兽医学院农业部猪遗传与改良重点实验室, 武汉 430070;  
2.漳州师范学院生物科学与技术系, 漳州 363000

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摘要

对内脏器官重量性状的QTL定位研究, 所见报道不多; 对于猪的繁殖性状, 尚需做进一步的探讨。本研究在总共214头(180头F2个体)组成的资源家系中, 在猪的SSC4、SSC6、SSC7、SSC8和SSC13上共选取39个微卫星标记, 检测了8种内脏器官的重量性状: 心重(HW)、肺重(LW)、肝+胆重(LGW)、脾重(SPW)、胃重(STW)、小肠重(SIW)、大肠重(LIW)和肾重(KW); 其他一些胴体性状: 胴体长性状1(自第一颈椎, CL1)、胴体长性状2(自第一胸椎, CL2)、肋骨数(RNS)和繁殖性状乳头数(TNS)的QTL定位。结果表明, 检测到3个染色体极显著水平的QTL ( $P \leq 0.01$ ), 它们是HW QTL定位在SSC6上30 cM处, RNS QTL 定位在SSC7上115 cM处和TNS QTL 定位在SSC7上110 cM处; 另外6个染色体显著水平的QTL ( $P \leq 0.05$ ) 是: LW (SSC13上119 cM处)、LGW (SSC6上 94 cM处)、SPW (SSC8上106 cM处)、SIW (SSC 4上0 cM处)、LIW (SSC 4上170 cM处)和TNS (SSC 6上95 cM处)。上述QTL解释的表型变异从0.04% 到 14.06%, 有些位点的QTL可以解释表型变异的10%以上, 如HW的QTL解释表型变异的9.52%、SIW的QTL解释表型变异的13.47%、定位在SSC6上的TNS QTL解释表型变异的14.06%, 而定位在SSC7上的TNS QTL解释表型变异的11.30%。多数内脏器官重量性状的QTL定位结果未见报道。胴体长未见显著水平的QTL, 而在SSC7上定位染色体极显著水平的肋骨数QTL。

关键词 [猪; 数量性状位点\(QTL\); 内脏器官重量性状; 胴体长性状; 乳头数性状](#)

分类号

## Detection of Quantitative Trait Loci Associated with Several Internal Organ Traits and Teat Number Trait in a Pig Population

Jinghu Zhang<sup>1,2</sup>, Yuanzhu Xiong<sup>1</sup>, Bo Zuo<sup>1</sup>, Minggang Lei<sup>1</sup>, Siwen Jiang<sup>1</sup>, Feng'e Li<sup>1</sup>, Rong Zheng<sup>1</sup>, Jialian Li<sup>1</sup>, Dequan Xu<sup>1</sup>

1. Key Laboratory of Swine Genetics and Breeding, Ministry of Agriculture, College of Animal Science and Veterinary Medicine, Huazhong Agri-cultural University, Wuhan 430070, China;  
2. Department of Biology Science & Technology, Zhangzhou Normal College, Zhangzhou 363000, China

Abstract

<P>Quantitative trait loci (QTL) were detected for 8 internal organ traits, 3 carcass length traits, and teat number trait in 214 pigs in a resource population that included 180 F2 individuals. A total of 39 microsatellite markers were examined on SSC4, SSC6, SSC7, SSC8, and SSC13. The genetic traits included heart weight (HW), lung weight (LW), liver and gallbladder weight (LGW), spleen weight (SPW), stomach weight (STW), small intestine weight (SIW), large intestine weight (LIW), kidney weight (KW), carcass length to the first cervical vertebra (CL1), carcass length to the first thoracic vertebra (CL2), rib numbers (RNS), and teat numbers (TNS). Results indicated that, 3 highly significant QTL ( $P \leq 0.01$  at chromosome-wise level) for HW (at 30 cM on SSC6), RNS (at 115 cM on SSC7), TNS (at 110 cM on SSC7), and 6 significant QTL ( $P \leq 0.05$  at chromosome-wise

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level) for LW (at 119 cM on SSC13), LGW (at 94 cM on SSC6), SPW (at 106 cM on SSC8), SIW (0 cM on SSC4), LIW (170 cM on SSC 4), and TNS (at 95 cM on SSC6) were detected. The phenotypic variances for which these QTL were accounted ranged from 0.04 % to 14.06 %. Most of these QTL had not been previously reported.</P>

**Key words** [pig](#) [quantitative trait loci \(QTL\)](#) [internal organ weight traits](#) [carcass length traits](#) [teat number trait](#)

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通讯作者 张敬虎 [jinghuzhang@163.com](mailto:jinghuzhang@163.com)