

动物遗传学

中国地方品种香猪的肌肉特异组织表达序列标签 (ESTs) 的分析

王秀利1,2*, 吴克亮3*, 李宁1, 李长绿3, 仇雪梅2, 王爱华3, 吴常信3

1. 中国农业大学农业生物技术国家重点实验室, 北京 100094;
2. 大连水产学院生命科学与技术学院, 大连 116023;
3. 中国农业大学动物科技学院, 北京 100094

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摘要

通过构建香猪肌肉组织cDNA文库,并在文库中随机挑选克隆进行测序的方法,获得了131个香猪肌肉EST序列。在这131个EST序列所代表的109个单一克隆中,有99个为人类及其他物种的同源序列,3个为已知的猪的ESTs,7个为未知ESTs。对这10个已知、未知ESTs进行开放阅读框预测并进行BlastX分析,没有找到高度同源的氨基酸序列。对上述EST所对应的基因功能分析结果表明,除去27.27%的EST未能分类外,克隆到的EST大多来自与基因/蛋白的表达调控相关的基因(占45.46%)。来自具有其他功能的基因的EST依次是细胞代谢占10.10%、细胞结构/迁移占10.10%、细胞/机体防御占5.05%和细胞信号/传导占2.02%。没有发现和细胞分裂相关的已知功能基因。本研究结果为中国地方品种香猪提供了第一个骨骼肌的基因表达谱,为今后寻找猪肌肉生长和肉用品质的候选基因奠定了基础。

关键词 [香猪; 背最长肌; cDNA文库; 表达序列标签; 基因表达谱](#)

分类号

Analysis of Expressed Sequence Tags from Skeletal Muscle-specific cDNA Library of Chinese Native Xiang Pig

WANG Xiu-Li1,2*, WU Ke-Liang3*, LI Ning1, LI Chang-Lv3, QIU Xue-Mei2, WANG Ai-Hua3, WU Chang-Xin3

1. The National Laboratories for Agrobiotechnobogy, China Agricultural University, Beijing 100094, China;
2. College of Life Science and Biotechnology, Dalian Fisheries University, Dalian 116023, China;
3. College of Animal Science and Technology, China Agricultural University, Beijing 100094, China

Abstract

<P>A Longissimus Dorsi muscle cDNA library of Xiang Pig was constructed, and 131 randomly isolated clones were sequenced in this study. The results of bioinformatics analysis showed that 131 ESTs represented 109 unique clones sequences, of which 99 showed homology to previously identified genes in humans or other mammals, 3 matched other uncharacterized expressed sequence tags (ESTs), and 7 showed no significant matches to sequences already present in DNA databases. No protein matches were found for 10 ESTs. Functional analysis of the ESTs showed that a considerable proportion of them encoded proteins involved in gene/protein expression (45.46%). Other classes included genes involved in metabolism (10.10%), cell structure/motility (10.10%), cell/organism defense (5.05%), cell signaling/communication (2.02%), and cell division (0.0%).

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Unclassified genes constituted the remaining 27.27%. This study reported the results of the first gene expression profile analysis of Chinese native Xiang Pig skeletal muscle cells, thereby greatly facilitating the functional study of candidate genes involved in muscle growth as well as in the improvement of meat quality in domestic pigs.</P>

Key words [Xiang Pig](#); [Longissimus Dorsi muscle](#); [cDNA library](#); [expressed sequence tags](#); [gene expression profile](#)

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通讯作者 李宁 ninglbau@public3.bta.net.cn