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基因芯片筛选畜禽热应激差异表达基因的研究进展

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Advances in Screening Differentially Expressed Genes Related to Heat Stress of Livestock and Poultry by Using cDNA Microarray

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摘要 热应激可引起畜禽机体一系列基因水平的变化,直接影响各组织器官正常的生理功能。基因芯片技术已广泛应用于畜禽多种致病、应激等方面的基因表达谱研究。本文结合基因芯片技术在畜禽热应激上的研究和应用,对全面筛选畜禽器官氧化损伤、生产性能及体外细胞培养中与热应激相关的差异表达基因进行综述,以期寻找和验证与畜禽热应激损伤密切相关的分子标记提供线索,并为修复畜禽热应激损伤的分子营养调控研究提供参考。

关键词: 基因芯片 畜禽 热应激 差异基因

Abstract: A series of gene level changes in livestock and poultry caused by heat stress directly affect various organs and tissues of normal physiological function. The technology of cDNA microarray has been widely applied in pathogenic, stress and other aspects of the study of gene expression profile in livestock and poultry. The latest research and application advances in screening differentially expressed genes related to heat stress of livestock and poultry by using the cDNA microarray were summarized, including the analysis of the differentially expressed genes related to heat stress on oxidative damage of tissues and organs, performance, and *in vitro* cultured cells from different livestock and poultry. The application of cDNA microarray could provide some important methods for searching and validating the biological molecular markers closely related to the body damage caused by heat stress, and play an important reference role in the research of nutritional regulation for heat stress-induced injuries in livestock and poultry.

Keywords: cDNA microarray, livestock and poultry, heat stress, differential genes

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- [2] KARAKAC T K, FLIGHT R M, DOUGLAS S E, et al. An introduction to DNA microarrays for gene expression analysis[J]. *Chemometrics and Intelligent Laboratory Systems*, 2010, 104: 28-52.
- [3] MURAKAMI A E, SAKAMOTO M I, NATALI M R, et al. Supplementation of glutamine and vitamin E on the morphometry of the intestinal mucosa in broiler chickens[J]. *Poultry Science*, 2007, 86(3): 488-495.
- [4] LEI P, LI Y, CHEN X, et al. Microarray based analysis of microRNA expression in rat cerebral cortex after traumatic brain injury[J]. *Brain Research*, 2009, 1284: 191-201.
- [5] OHTA S, OHSAWA I, KAMINO K, et al. Mitochondrial ALDH2 deficiency as an oxidative stress[J]. *Annals of the New York Academy of Sciences*, 2004, 1011: 36-44.
- [6] ZHANG H J, DRAKE V J, MORRISON J P, et al. Molecular biology of thermoregulation: selected contribution: differential expression of stress-related genes with aging and hyperthermia[J]. *Journal of Applied Physiology*, 2002, 92(4): 1762-1769.
- [7] SONCIN F, ZHANG X, CHU B, et al. Transcriptional activity and DNA binding of heat shock factor-1 involve phosphorylation on threonine 142 by CK2[J]. *Biochemical and Biophysical Research Communications*, 2003, 303(2): 700-706. 
- [8] LOIZOU J I, EL-KHAMISY SF, ZLATANOU A, et al. The protein kinase CK2 facilitates repair of chromosomal DNA singlestrand breaks [J]. *Cell*, 2004, 117(1): 17-28. 
- [9] GONZALEZ F J. Role of cytochromes p450 in chemical toxicity and oxidative stress: studies with cyp2e1[J]. *Mutation Research-Fundamental and Molecular Mechanisms of Mutagenesis*, 2005, 569(1/2): 101-110.
- [10] ABIDA W M, NIKOLAEV A, ZHAO W, et al. FBXO₁₁ promotes the Neddylation of p53 and inhibits its transcriptional activity[J]. *The Journal of Biological Chemistry*, 2007, 282(3): 1797-1804.
- [11] AGUILAR R C, WENDLAND B. Ubiquitin not just for proteasomes anymore[J]. *Current Opinion in Cell Biology*, 2003, 15(2): 184-190. 
- [12] LACETERA N, BERNABUCCI U, BASIRICO L, et al. Heat shock impairs DNA synthesis and down-regulates gene expression for leptin and Ob-Rb receptor in concanavalin A-stimulated bovine peripheral blood mononuclear cells[J]. *Veterinary Immunology and Immunopathology*, 2009, 127(1/2): 190-204.
- [13] COLLIER R J, STIENING C M, POLLARD B C. Use of gene expression microarrays for evaluating environmental stress tolerance at the cellular level in cattle[J]. *Journal of Animal Science*, 2006, 84: 1-13.
- [14] KUROKAWA M, KORNBLUTH S. Caspases and kinases in a death grip[J]. *Cell*, 2009, 139(5): 838-854.

- [1] 郭军蕊, 刘国华, 杨斌, 张爱华, 王月超. 畜禽养殖场除臭技术研究进展[J]. *动物营养学报*, 2013, 25(8): 1708-1714
- [2] 孙先枝, 程建波, 卜登攀, 潘龙, 周凌云. 黄芩苷的生物学功能和黄芩及其提取物在畜禽生产中的应用研究进展[J]. *动物营养学报*, 2013, 25(7): 1459-1464
- [3] 高巧仙, 宋代军, 靳露. 饲料n-6/n-3多不饱和脂肪酸比例对畜禽健康和产品质量的影响[J]. *动物营养学报*, 2013, 25(7): 1429-1436
- [4] 杜瑞平, 温雅俐, 姚焰础, 江山, 高民. 热应激对奶牛瘤胃液微生物数量的影响[J]. *动物营养学报*, 2013, 25(2): 334-343
- [5] 宋代军, 何钦, 姚焰础. 热应激对不同泌乳阶段奶牛生产性能和血清激素浓度的影响[J]. *动物营养学报*, 2013, 25(10): 2294-2302
- [6] 陈元元, 朱宇旌, 张勇. 苜蓿多糖在畜禽饲料中的应用[J]. *动物营养学报*, 2013, 25(1): 36-43
- [7] 许啸, 刘君地, 李燕, 王超, 余婕, 齐智利. 热应激对奶山羊瘤胃发酵指标的影响及有机铬对其的调控作用[J]. *动物营养学报*, 2013, 25(1): 100-106
- [8] 张万金, 李胜利, 史海涛, 骆雅萍, 杨军香, 尹义江, 贾春涛. 饲料添加不同种类的糖蜜对夏季热应激奶牛采食量和产奶性能的影响[J]. *动物营养学报*, 2013, 25(1): 163-170
- [9] 高艳霞, 李秋凤, 曹玉凤, 李建国, 冯志华, 于海川. 饲料添加脂肪酸钙对热应激肉牛生长性能和外周血淋巴细胞凋亡的影响[J]. *动物营养学报*, 2012, 24(8): 1534-1542
- [10] 孙云子, 余冰, 陈代文, 陈希剑. 饲料蛋白质源对断奶仔猪小肠全基因组转录谱的影响[J]. *动物营养学报*, 2012, 24(4): 689-703
- [11] 许啸, 齐智利. 大豆异黄酮对畜禽生理机能的调控[J]. *动物营养学报*, 2012, 24(3): 436-438
- [12] 路静, 李文立, 姜建阳, 李方正, 任慧英. 谷氨酰胺对肉鸡小肠组织结构和吸收能力的影响[J]. *动物营养学报*, 2012, 24(2): 291-300
- [13] 朱宇旌, 潘香岑, 张勇, 李欣蔚, 马勇, 邵彩梅. 红三叶异黄酮的提取方法和生理功能[J]. *动物营养学报*, 2012, 24(12): 2303-2310
- [14] 宋小珍, 付戴波, 瞿明仁, 杨食堂, 刘道杨, 徐振松. 热应激对肉牛血清内分泌激素含量、抗氧化酶活性及生理生化指标的影响[J]. *动物营养学报*, 2012, 24(12): 2485-2490
- [15] 陈小玲, 黄志清, 郭秀兰, 唐仁勇, 刘光芒, 吴秀群. 白藜芦醇调节畜禽脂质代谢的机制[J]. *动物营养学报*, 2012, 24(10): 1861-1865