



动物营养学报

CHINESE JOURNAL OF ANIMAL NUTRITION

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动物营养学报 2013, Vol. 25 Issue (3) :458-463 DOI: 10.3969/j.issn.1006-267x.2013.03.002

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转录因子E2相关因子2-抗氧化反应元件信号通路与机体抗氧化的关系

朱宇旌¹, 李艳¹, 张勇¹, 于治姣¹, 邵彩梅²

1. 沈阳农业大学畜牧兽医学院, 沈阳 110866;

2. 辽宁禾丰牧业有限公司, 沈阳 110164

Relationship between Transcription Factor E2-Related Factor 2-Antioxidant Response Elements Signaling Pathway and Antioxidant Effects

ZHU Yujing¹, LI Yan¹, ZHANG Yong¹, YU Zhijiao¹, SHAO Caimei²

1. College of Animal Science and Veterinary, Shenyang Agricultural University, Shenyang 110866, China;

2. Liaoning Well Hope Agri-Tech Co., Ltd., Shenyang 110164, China

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摘要 转录因子E2相关因子2-抗氧化反应元件(Nrf2-ARE)信号通路是机体抗氧化过程中的重要调节途径。Nrf2-ARE信号通路在抗氧化活化过程中受亲核物质、氧化应激因子、蛋白激酶C(PKC)、丝裂原活化蛋白激酶(MAPKs)、磷脂酰肌醇激酶(PI3K)、胰腺内质网激酶(PERK)等因子调控。Nrf2-ARE信号通路的活化可以保护细胞的酶类和抗氧化物处于基础表达水平,细胞处于稳定状态。本文就Nrf2-ARE信号通路调节机体抗氧化的机理进行综述。

关键词: 转录因子E2相关因子2 抗氧化反应元件信号通路 抗氧化 活性调节 氧化还原平衡

Abstract: The transcription factor E2-related factor 2 (Nrf2)-antioxidant response elements (ARE) signaling pathway has an important regulate function in the process of the antioxidant effects. Nrf2-ARE signaling pathway is regulated by series of adjustment factors in the process of activation of antioxidant effects, such as nucleophilic substances, oxidative stress factor, protein kinase C (PKC), mitogen-activated protein kinase (MAPKs), phosphatidylinositol kinase (PI3K) and pancreatic endoplasmic network kinase (PERK). The activation of Nrf2-ARE signaling pathway can maintain enzymes and antioxidants in the basal expression levels, and the cells in a stable state. This review summarized the mechanism of Nrf2-ARE signaling pathway in regulating antioxidant effects.

Keywords: transcription factor E2-related factor 2, antioxidant response elements signaling pathway, antioxidant, activity regulation, redox balance

收稿日期: 2012-09-18;

基金资助:

国家自然科学基金(31101253; 30972112)

通讯作者 张勇,教授,硕士生导师,E-mail:syndzhy@126.com

引用本文:

朱宇旌, 李艳, 张勇等. 转录因子E2相关因子2-抗氧化反应元件信号通路与机体抗氧化的关系[J]. 动物营养学报, 2013,V25(3): 458-463

ZHU Yujing, LI Yan, ZHANG Yong etc. Relationship between Transcription Factor E2-Related Factor 2-Antioxidant Response Elements Signaling Pathway and Antioxidant Effects[J]. Chinese Journal of Animal Nutrition, 2013,V25(3): 458-463.

链接本文:

http://118.145.16.228/Jweb_dwyy/CN/10.3969/j.issn.1006-267x.2013.03.002 或 http://118.145.16.228/Jweb_dwyy/CN/Y2013/V25/I3/458

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