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## 一些抗氧化剂的抗/促氧化作用及其机制

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## Anti/Pro-oxidative Functions of Antioxidants and Their Mechanisms

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**摘要** 在外界恶劣环境,或受到细菌、病毒等因素诱发的病理条件下,动物机体抗氧化/氧化平衡系统被打破,易引发氧化损伤,并可能影响到动物健康及生产。生产中维生素A、维生素C、维生素E、异黄酮、 $\alpha$ -硫辛酸被用作抗氧化物质;但近年来越来越多证据表明,该类抗氧化物质在低剂量使用条件下表现抗氧化作用,而在高剂量作用下却表现促氧化作用。本文就机体中活性氧的生成、抗氧化物质的抗/促氧化效应及其机制作一综述,为动物的抗氧化研究和科学使用抗氧化剂提供参考。

**关键词:** 活性氧 维生素A 维生素C 维生素E  $\alpha$ -硫辛酸 异黄酮 抗/促氧化

**Abstract:** Under some severe pathological conditions induced by serious environment, bacteria or virus, the balance between anti-oxidation and oxidation was disturbed, which led to oxidative injury of cells and body, and had negative effects on animal health and production. Vitamin A, C, E and  $\alpha$ -lipoic acid were commonly used as antioxidants in animal production. However, a growing body of evidence showed that these oxidants exerted anti-oxidative effects in a relatively low dose, whereas they caused pro-oxidative potential in body when used in a high dose. The pathway involved in the production of reactive oxygen species and the potential mechanism involved in anti/pro-oxidative effect are summarized in this review.

**Keywords:** reactive oxygen species, vitamin A, vitamin C, vitamin E,  $\alpha$ -lipoic acid, isoflavone, anti/pro-oxidation

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