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## 饲料营养素对DNA甲基化的影响及其机制

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## Effects of Dietary Nutrients on DNA Methylation and Their Mechanisms

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摘要 饲料营养素如B族维生素、胆碱、能量、蛋白质以及矿物元素等可对机体DNA甲基化状态产生影响。营养素对DNA甲基化状态的影响主要是通过营养素对一碳循环过程直接或间接的影响来实现的。本文阐述了B族维生素(叶酸、维生素B<sub>12</sub>)、胆碱、能量、蛋白质和矿物元素(硒、锌、镁和铜)对DNA甲基化状态的影响及其机制,旨在为从分子角度调控畜禽营养代谢和生产性能提供新的思路。

关键词: 营养素 DNA甲基化 表观遗传 机制

Abstract: Dietary nutrients such as vitamin B, choline, energy, protein, mineral elements, and so on can affect DNA methylation. The effects of nutrients on DNA methylation are by means of the one-carbon cycle. This paper reviewed the effects of vitamin B (folate and vitamin B<sub>12</sub>), choline, energy, protein and mineral elements on DNA methylation and the possible mechanisms in order to provide new ways to regulate nutritional metabolism and performance of livestock.

Keywords: nutrients, DNA methylation, epigenetic, mechanisms

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