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尿素转运因子B影响牛瘤胃尿素氮再循环的机制

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Mechanism for Effects of Urea Transporter B on Urea Nitrogen Recycling in Rumen of Cows

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摘要 尿素转运因子B(UT-B)是高选择性快速通透尿素的膜通道蛋白分子,介导尿素顺浓度梯度的跨膜转运,对于尿素氮进入瘤胃的再循环过程起着关键的调控作用。其基因表达受饲料氮水平及瘤胃发酵参数和内环境指标等影响。但UT-B如何调控牛瘤胃尿素氮再循环,尚有待进一步研究。本文旨在就牛瘤胃尿素氮再循环及UT-B在牛瘤胃尿素氮再循环中的作用进行综述,同时也对影响UT-B表达的因素,如饲料氮水平和瘤胃发酵参数及内环境指标等进行探讨。

关键词: 尿素转录因子B 尿素氮再循环 瘤胃 牛

Abstract: Urea transporter B (UT-B) is a membrane channel protein which rapidly transports urea with high selectivity, and modulates urea movement across biological membrane. UT-B plays a key role in the urea nitrogen recycling into the rumen. And its gene expression is affected by the dietary nitrogen level, rumen fermentation parameters and rumen environment indexes. But the mechanism which UT-B modulates urea nitrogen recycling is unclear. Here, we reviewed nitrogen recycling in rumen of cows and the role of UT-B in it, and discussed the influencing factors of UT-B gene expression, such as dietary nitrogen level, rumen fermentation parameters and rumen environment indexes, etc.

Keywords: urea transporter B, urea nitrogen recycling, rumen, cows

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