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## 维生素D生物学效价研究的一些新进展

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## Resent Advances in Assessing Vitamin D Bioavailability

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**摘要** 关于维生素D生物学效价的评定方法主要分为生物学方法和化学方法,然而至今对其没有统一的结论。研究结果大部分显示维生素D<sub>3</sub>的效价高于或等于维生素D<sub>2</sub>的效价,且维生素D<sub>3</sub>及其代谢产物效价的对比大致为维生素D<sub>3</sub>≤24,25-二羟基维生素D<sub>3</sub>[24,25-(OH)<sub>2</sub>D<sub>3</sub>]=25,26-二羟基维生素D<sub>3</sub>[25,26-(OH)<sub>2</sub>D<sub>3</sub>]≤25-羟基维生素D<sub>3</sub>[25-(OH)D<sub>3</sub>]≤1,25-二羟基维生素D<sub>3</sub>[1,25-(OH)<sub>2</sub>D<sub>3</sub>]。影响维生素D生物学效价的因素有多种,其内在因素主要包括关键酶的活性及其反馈调节机制、活性维生素D的结构与维生素D转运蛋白及维生素D受体的亲和性差异等;外在因素主要有试验动物、评价指标及评价方法、光照、维生素D载体等。本文主要从维生素D生物学效价的评定方法、内在和外在的影响因素方面进行综述,为相关研究提供一定的参考依据。

**关键词:** 维生素D 生物学效价 评定方法 影响因素

**Abstract:** The methods of assessing vitamin D bioavailability are divided into biological assay and specific chemical methods, but so far the methods are still controversial. Most of the research results showed that the potency of vitamin D<sub>3</sub> was higher than or equal to the potency of vitamin D<sub>2</sub>, and the potency of vitamin D<sub>3</sub> active components had such roughly order, vitamin D<sub>3</sub>≤24,25-dihydroxyvitamin D<sub>3</sub>[24,25(OH)<sub>2</sub>D<sub>3</sub>]=25,26-dihydroxyvitamin D<sub>3</sub>[25,26(OH)<sub>2</sub>D<sub>3</sub>]≤25-hydroxyvitamin D<sub>3</sub>[25(OH)D<sub>3</sub>]≤1,25-dihydroxyvitamin D<sub>3</sub>[1,25(OH)<sub>2</sub>D<sub>3</sub>]. Various factors influencing vitamin D bioavailability include internal factors, such as key enzyme activities and their feedback regulation, and the relationship between the structure of biological active vitamin D and its affinity to vitamin D binding protein or vitamin D receptor, and external factors, such as experimental animals, evaluation indicators, assessing methods, light and vitamin D vehicles. In order to provide references for related studies, assessing methods, internal and external influence factors of vitamin D bioavailability are reviewed in this paper.

**Keywords:** vitamin D, bioavailability, assessing methods, influence factors

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