

论著

## 维生素A缺乏对小鼠胚胎Hox-3.5 mRNA表达与胚胎发育关系的研究

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**摘要** 目的: 探讨Vit.A缺乏对胚胎Hox-3.5 mRNA表达的影响及其与胚胎发育的关系。方法: 初断乳的昆明种雌鼠, 随机分为正常对照组(N)、Vit.A缺乏组(A)、妊娠第0 d补充Vit.A组(B)和妊娠第7 d补充Vit.A组(C)。按AOAC方法建立孕鼠Vit.A缺乏模型。在妊娠第12 d, 一半孕鼠剖腹取出胎鼠, 采用原位杂交方法检测小鼠胚胎Hox-3.5mRNA的表达, 同时检测孕鼠血清Vit.A水平。另一半孕鼠在妊娠第19 d剖腹取胎, 用于检查胚胎发育。结果:孕鼠血清Vit.A缺乏时, 孕12 d胚胎组织Hox-3.5mRNA的含量明显减少; 妊娠第0 d补充Vit.A, Hox-3.5mRNA的含量与N组无显著性差异; 妊娠第7 d补充, Hox-3.5mRNA的含量虽比A组增加, 但仍明显低于N组。此外, Vit.A缺乏使胎鼠的体重、身长、尾长明显小于正常对照组(P < 0.05), 且出现脑膨出及细小肾等畸形。GD 7补充Vit.A组明显好于Vit.A缺乏组, 但与正常对照组相比仍有差异。交配后0 d补充Vit.A组与正常对照组无差异。结论: Vit.A缺乏对胚胎发育的影响可能与Vit.A在转录水平调控Hox-3.5 mRNA的表达有关。

**关键词** [Vit.A缺乏](#); [Hox-3.5 mRNA](#); [小鼠胚胎发育](#)

## EFFECTS OF VIT.A DEFICIENCY ON THE EXPRESSION OF Hox-3.5 mRNA AND THE DEVELOPMENT AND GROWTH OF MOUSE EMBRYOS

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**Abstract** Purpose: To investigate the effect of Vit. A deficiency on Hox3.5 mRNA expression and development of mouse embryos. Methods: Sixty Kunming female mice were divided into four groups: normal control group N (4 000 IU Vit.A/kg diet), Vit.A deficiency group A (0 IU Vit.A/kg diet), Vit.A-supplement after 0d.p.c (day post coitus), group B and Vit.A-supplement after 7 d.p.c group C (B、C were fed 0 IU Vit.A/kg diet before crossover, B was fed 10 000 IU Vit.A/kg diet after 0 d.p.c and C was fed 10 000 IU Vit.A/kg diet after 7 d.p.c.). On the 12th day p.c. pregnant mice in every group were killed and the uteri were dissected and the mouse embryos were taken out immediately. Meanwhile, blood samples were taken from pregnant mice for the determination of serum Vit.A. In situ hybridization was used to determine Hox-3.5 mRNA expression in the mouse embryos by digitoxin-labeled cDNA probes. Results: Hox-3.5 mRNA expression in the embryos of group A and C decreased significantly as compared with group N and B (P<0.01, P<0.05), and there was no difference between group B and group N. The level of Hox-3.5 mRNA expression in group C was higher than that of group A, but still lower than group N. Vit.A-deficiency(A) was significantly lower than that of group A and abnormal development of the skeleton existed. Moreover, encephalocele and micro kidney were found. Conclusion: Vit.A may regulate Hox gene expression in transcription level and may influence the development and growth of embryos.

**Keywords** [Vitamin A deficiency](#) [Hox-3.5 mRNA expression](#) [mouse embryos](#)

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