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## Osterix基因敲除及过表达对小鼠脊椎骨量的影响(PD)

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Title: Effect of osterix knock-out or over-expression on bone volume in vertebral body in mice

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摘要: 目的 研究小鼠Osterix基因敲除及过表达后对其脊椎骨量的影响及作用机制。  
方法 将12周龄的野生型小鼠(WT)、Osterix基因敲除小鼠(Osterix-KO)和Osterix过表达转基因小鼠(Osterix-CA)分为3组(每组8只,均为雄性),分别采用X线摄像和HE染色观察小鼠腰椎骨量的变化,TRAP染色检测破骨细胞水平,免疫组织化学检测NF- $\kappa$ B受体活化因子配体(RANKL)、骨涎蛋白(BSP)和骨桥蛋白(OPN)表达水平,并将所得数据进行统计学分析。结果 Osterix-KO小鼠在X线和HE染色表现为腰椎骨密度和骨量增加,破骨细胞数量显著减少( $P<0.05$ ),椎体中RANKL、BSP和OPN的表达水平显著降低( $P<0.05$ ),而Osterix-CA小鼠的脊椎X线、HE染色表现及破骨细胞数量与WT小鼠无明显差异。结论 Osterix基因敲除小鼠脊柱骨吸收活性减弱伴成骨细胞分化能力降低,进而发生骨量明显增加。

Abstract: Objective To investigate the changes of bone volume in vertebral body and the underlying possible mechanism in osterix knock-out (Osx-KO) and constitutive-activation (Osx-CA) mice. Methods A total of 24 male mice at 12-week old including, wild type (WT), Osx-KO and Osx-CA groups ( $n=8$ ) were subjected in this study. X-ray radiology and HE staining were used to evaluate the change of bone volume. TRAP staining was used to assess the activity of osteoclasts. Immunohistochemical assay (IHC) was used to examine the expression

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levels of RANKL, BSP and OPN. IHC and TRAP staining results were semi-quantitative analyzed by manual counting. Results X-ray examination and HE staining showed that the bone density and bone volume in the lumbar vertebral body was increased significantly in OSX-KO mice, while TRAP staining showed that the number of osteoclasts was decreased ( $P<0.01$ ), and IHC revealed that the expression levels of RANKL, BSP and OPN were down-regulated ( $P<0.01$ ) in OSX-KO mice. However, no obvious change was found in the bone density, bone volume and the number of osteoclasts in Osterix-KO mice compared with the WT mice. Conclusion Osterix knock-out may weaken bone resorption activity and osteoblast differentiation in the lumbar vertebral body, and result in an increased bone volume.

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#### 参考文献/REFERENCES:

陈思旭, 宗兆文, 贾敏, 等. Osterix基因敲除及过表达对小鼠脊椎骨量的影响[J]. 第三军医大学学报, 2013, 35(21): 2306-2309.

#### 相似文献/REFERENCES:

[1] 宗兆文, 陈思旭, 贾敏, 等. Osterix在调控脊柱发育中的作用[J]. 第三军医大学学报, 2013, 35(03): 220.

Zong Zhaowen, Chen Sixu, Jia Min, et al. Role of Osterix in development of spine in mice[J]. J Third Mil Med Univ, 2013, 35(21): 220.

[2] 邹利光, 戚跃勇, 孙清荣, 等. MRI对X线平片表现为不典型脊椎骨折的诊断价值[J]. 第三军医大学学报, 2005, 27(10): 1051.

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