

论文

人甲状旁腺素(1-34)对新生大鼠成骨细胞碱性磷酸酶活性影响

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摘要:

目的: 研究外源性hPTH(1-34)对原代培养成骨细胞ALP活性影响。方法: 新生大鼠头盖骨中取成骨细胞,改良Gomori氏钙钴法染色鉴定, 磷酸苯二钠法测定ALP活性, RT-PCR检测ALP mRNA表达。结果: 10⁻⁸ mol.L⁻¹ hPTH(1-34)以48 h为一循环, 在每一循环的前12 h作用于细胞时, 可使成骨细胞ALP活性较对照组增加最明显, hPTH(1-34) 48 h作用组, 与对照相比细胞ALP活性无显著差异。hPTH(1-34) 12 h作用组, 成骨细胞ALP mRNA表达最高。结论: hPTH(1-34)刺激成骨细胞内ALP活性升高与给药方式及药物浓度有关, 间歇性给药成骨细胞内ALP活性升高。

关键词: 人甲状旁腺素(1-34) 成骨细胞 碱性磷酸酶活性

THE EFFECT OF HUMAN PARATHYROID HORMONE(1-34) ON ALKALINE PHOSPHATASE ACTIVITY OF NEONATAL WISTAR OSTEOBLASTIC CELLS

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Abstract:

AIM: To investigate the effect of human parathyroid hormone(1-34) [hPTH(1-34)] on alkaline phosphatase(ALP) activity of osteoblastic cells. METHODS: Osteoblastic cells were isolated from newborn rat calvaria through trypsin digestion. Quality of the cells was assessed by special ALP histochemistry. The activity of ALP was measured by p-nitrophenyl sodium phosphate assay. The expression of ALP mRNA was detected by RT-PCR. RESULTS: Cellular ALP activity was increased obviously while osteoblastic cells were incubated with 10⁻⁸ mol. L⁻¹ hPTH(1-34) for the first 12 h of each 48 h incubation cycle and repeated the cycle for 8 times. Cellular ALP activity showed no obvious changes at continuous exposure to hPTH(1-34) compared with control group. Expression of ALP mRNA was increased greatest while osteoblastic cells were incubated with 10⁻⁸ mol. L⁻¹ hPTH(1-34) for the first 12 h of each 48 h incubation cycle and repeated the cycle for 8 times. CONCLUSION: hPTH(1-34) has diverse effects on osteoblastics ALP activity depending on the exposure time and its concentration *in vitro*, cellular ALP activity increases under intermittent exposure to hPTH(1-34).

Keywords: osteoblastic cells ALP activity human parathyroid hormone(1-34)

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