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## 基础医学

### 周期性机械牵张对大鼠肺泡巨噬细胞TLR4表达的影响

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摘要:

目的 探讨周期性机械牵张对大鼠肺泡巨噬细胞(AM)Toll样受体4(TLR4)表达的影响。方法 采用美国Flexercell公司生产的Flexercell 4000TTM应力加载系统,对体外培养的AM进行周期性牵张。实验分为机械牵张6h组、8h组(30%应变率,0.3Hz频率,方波)和静止对照组。RT-PCR检测AM上TLR4 mRNA的表达;ELISA检测巨噬细胞炎性蛋白2(MIP-2)的浓度;免疫细胞化学法检测AM上TLR4蛋白表达。结果 与静止对照组比较,机械牵张6h组、8h组TLR4 mRNA、MIP-2蛋白及TLR4蛋白表达显著升高( $P<0.01$ )。结论 机械牵张导致了大鼠肺泡巨噬细胞TLR4和MIP-2表达上调。

关键词: 周期性机械牵张;肺损伤;肺泡巨噬细胞;Toll样受体4;免疫细胞化学;RT-PCR

### Effects of cyclic mechanical stretch on the expression of TLR4 in alveolar macrophages of rats

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Abstract:

Objective To investigate the effects of cyclic mechanical stretch on the expression of Toll-like receptor 4(TLR4) in alveolar macrophages(AM) of rats. Methods Rats' AM were cyclicly stretched in vitro by using FX4000TTM Cell Stretching Unit produced in Flexercell company of the United States. The AM cells were divided into mechanical stretch of 6h and 8h groups(cyclic mechanical stretch at 30%, frequency of 0.3 Hz and square wave) and static control group. TLR4 mRNA was determined by reverse transcription-polymerase chain reaction (RT-PCR); the concentration of macrophage inflammatory protein 2(MIP-2) was detected by ELISA, while TLR4 protein was determined by immunohistochemistry. Results Expressions of TLR4 mRNA, MIP-2 and TLR4 protein increased significantly in mechanical stretch of 6h and 8h groups compared with those in static control group( $P<0.01$ ). Conclusion Cyclic mechanical stretch upregulates the expressions of TLR4 and MIP-2 in alveolar macrophages of rats.

Keywords: Cyclic mechanical stretch; Lung injury; Alveolar macrophages; Toll-like receptor 4; Immunocytochemistry; RT-PCR

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