

基础研究

DNA-PKcs协同自身免疫调节因子调控小鼠腹腔巨噬细胞Toll样受体的表达及其意义

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摘要:

目的: 探讨小鼠腹腔巨噬细胞内DNA-PKcs协同自身免疫调节因子调控Toll样受体(TLRs)的表达水平, 阐明外周免疫系统中自身免疫调节因子的调控作用及其意义。方法: 小鼠腹腔巨噬细胞分为pEGFPC1/mAire转染组、pEGFPC1/mAire与negative control siRNA共转染组、pEGFPC1/mAire与DNA-PKcs siRNA共转染组、pEGFPC1转染组、pEGFPC1与negative control siRNA共转染组和pEGFPC1与DNA-PKcs siRNA共转染组, 采用RT-PCR方法检测各组小鼠腹腔巨噬细胞内TLR1~9的表达水平; 采用脂质体转染重组质粒pEGFPC1/mAire和空载质粒pEGFPC1至小鼠腹腔巨噬细胞, 采用RT-qPCR方法检测2组细胞TLR1~9的表达水平; 采用RT-qPCR方法检测2组转染细胞沉默DNA-PKcs前后TLRs的表达水平。结果: 小鼠腹腔巨噬细胞能表达TLR1~9; 与转染pEGFPC1/mAire组细胞比较, 转染自身免疫调节因子后巨噬细胞TLR1、3和8的表达水平增加(P<0.05), 其他组TLRs表达水平无明显变化(P>0.05); DNA-PKcs沉默后, 转染pEGFPC1/mAire组细胞TLR1、3和8的表达水平较未沉默组明显下降(P<0.05), 而在转染pEGFPC1的细胞内DNA-PKcs沉默前后TLR1-9表达水平均无明显变化(P>0.05)。结论: 在小鼠腹腔巨噬细胞内, 自身免疫调节因子能够调控TLR1、3和8的表达, 其机制可能与DNA-PKcs协同作用有关。

关键词: 自身免疫调节因子; 巨噬细胞; Toll样受体; 协同分子

Expression of Toll like receptor regulated by DNA- PKcs and autoimmune regulator in peritoneal macrophages in mice and its significance

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Abstract:

To study the expression levels of the Toll like receptor(TLRs) regulated by DNA-PKcs and autoimmune regulator in peritoneal macrophages in mice, and to clarify the function and significance of autoimmune regulator in peripheral immune system. Methods The macrophages were divided into pEGFPC1/mAire transfection group, pEGFPC1/mAire and negative control siRNA co-transfection group, pEGFPC1/mAire and DNA-PKcs siRNA co-transfection group, pEGFPC1 and negative control siRNA co-transfection group, and pEGFPC1 and DNA-PKcs siRNA co-transfection group; the expression levels of TLR1-9 in peritoneal macrophages of the mice in various groups were detected by RT-PCR. The expression levels of TLR1-9 in peritoneal macrophages were detected by RT-qPCR after transfected with pEGFPC1/mAire and pEGFPC1 into the peritoneal macrophages in mice; the expression levels of TLRs in the transfected cells before and after silencing DNA-PKcs were detected by RT-qPCR. Results The peritoneal macrophages in mice could express TLR1-9. Compared with pEGFPC1/mAire transfection group, the expression levels of TLR1, 3 and 8 were increased in peritoneal macrophages after transfected with autoimmune regulator(P<0.05) and those in the other groups did not changed significantly(P>0.05). After silencing DNA-PKcs, the expression levels of TLR1, 3, and 8 were decreased (P<0.05) in peritoneal macrophages in pEGFPC1/mAire transfection group than thoes in unsilenced group, but the expression levels of TLR1-9 didn't have significant changes in macrophages transfected with pEGFPC1 before and after silence(P>0.05). Conclusion Autoimmune regulator can regulate the expression levels of TLR1, 3, and 8 in peritoneal macrophages in mice, and the mechnism may be associated with DNA-PKcs interaction effect.

Keywords: autoimmune regulator; macrophages; Toll-like receptor; partner

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