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论著

阿托品对人视网膜色素上皮细胞D407株表达及分泌TGF β2的调控

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摘要：

目的：通过观察不同浓度阿托品联合10-5 mol/L卡巴胆碱干预下D407细胞表达及分泌TGF β2的变化，探讨阿托品对RPE细胞表达及分泌TGF β2的调控作用。方法：常规培养D407细胞，药物干预前换用无血清培养基培养，分为4组。（1）实验组（A组）：A1~A5组依次加入10-4～10-8 mol/L阿托品，孵育30 min后每组加入10-5 mol/L卡巴胆碱；（2）阴性对照组（B组）：B1~B5组依次加入10-4～10-8 mol/L阿托品；（3）阳性对照组（C组）：加入10-5 mol/L卡巴胆碱；（4）空白对照组（D组）：不加药物。干预24 h后采用RT PCR,Western印迹及ELISA法检测细胞胞浆中TGF β2 mRNA及蛋白质的表达水平及上清液中TGF β2的含量。统计学方法采用单因素方差分析。结果：实验组D407细胞胞浆TGF β2 mRNA和蛋白质表达水平及上清中TGF β2蛋白质含量均较阳性对照组低，10-4 mol/L阿托品可完全阻断10-5 mol/L卡巴胆碱上调TGF β2表达及分泌的作用，其效应具有浓度依赖性（F=1 056.897, 1 320.170, 475.657;P＜0.001）。阴性对照组D407细胞胞浆TGF β2 mRNA和蛋白质表达水平及上清中TGF β2蛋白质含量与空白对照组比较差异无统计学意义（P＞0.05）。结论：阿托品可有效抑制卡巴胆碱促进人RPE细胞表达及分泌TGF β2的功能，提示M受体参与介导此过程。

关键词： 视网膜色素上皮 转化生长因子&beta 2 卡巴胆碱 阿托品

Expression and secretion of TGF β2 in human retinal pigment epithelium cell line D407 regulated by atropine

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Abstract:

ObjectiveTo investigate the regulation of atropine to the expression and secretion of TGF β2 in retinal pigment epithelium (RPE) cells by observing the changes of those under different treatments of atropine and carbachol.MethodsD407 cells were cultured conventionally and divided into 4 groups as follows: (1) An experimental group (Group A), cells were pretreated with 10-4 10-8 mol/L atropine for 30 min, and then treated with 10-5 mol/L carbachol; (2) a negative control group (Group B), cells were treated with 10-4 10-8 mol/L atropine; (3) a positive control group (Group C), cells were treated with 10-5 mol/L carbachol; (4) a blank control group (Group D). The concentration of TGF β2 in the supernate, and the level of TGF β2 mRNA and protein were measured by ELISA, RT PCR, and Western blot after the 24 hour treatment. The data were analyzed by analysis of variance.ResultsThe levels of TGF β2 mRNA and protein in the cytoplasm and the concentration of TGF β2 in the supernate in the experimental groups were lower than those of the positive control group. Atropine at 10-4 mol/L could completely inhibit the effect of carbachol at 10-5 mol/L. The effect of atropine was concentration dependent (F=1 056.897,1 320.170, and 475.657; P＜0.001). There was no change of TGF β2 level in the cytoplasm and supernate with the treatment of atropine alone (P＞0.05). ConclusionCarbachol can promote the expression and secretion of TGF β2 in human RPE cells and atropine could reverse it effectively, suggesting that M receptor may be involved.

Keywords: retina pigment epithelium;transforming growth factor β2;carbachol;atropine

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