

论著

强脉冲光对成纤维细胞分泌TGF β 1的影响及JNK抑制剂的干预作用

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摘要:

目的: 研究强脉冲光(intense pulsed light, IPL)照射对皮肤成纤维细胞分泌TGF β 1的影响及JNK抑制剂SP600125的干预作用。方法: 利用包皮环切术切除的包皮组织体外分离、培养原代成纤维细胞。然后, 将成纤维细胞分为两组试验: 第1组为IPL治疗组, 用能量密度分别为0(阴性对照), 10, 18, 27, 36和36 J/cm²×2(能量密度为36 J/cm²的IPL照射两次)的IPL照射; 第2组为IPL+抑制剂组, 包括IPL(对照)和IPL+SP600125(JNK抑制剂)两亚组, 在加入抑制剂2 h后, 用能量密度为36 J/cm²的IPL照射。48 h后, 采用ELISA法检测两组细胞培养上清液(culture supernatants, CS)中TGF β 1的浓度。结果: IPL治疗组CS中TGF β 1的浓度在10,18,27及36 J/cm²分别与阴性对照组相比较均减少, 而在36 J/cm²×2时与阴性对照相比较增高; IPL+抑制剂组CS中TGF β 1的浓度IPL+SP600125组与对照相比较减少(P<0.05)。结论: 强脉冲光在较低能量密度时抑制皮肤成纤维细胞TGF β 1的分泌, 较高能量密度时能促进TGF β 1的分泌; 在IPL影响成纤维细胞分泌TGF β 1的过程中, JNK抑制剂起抑制作用, IPL可能通过JNK途径上调TGF β 1的分泌。

关键词: 强脉冲光 成纤维细胞 JNK GF β 1

Influence of intense pulsed light on the secretion of TGF β 1 in cultured human fibroblasts and intervention of JNK inhibitor

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Abstract:

Objective To determine the influence of intense pulsed light (IPL) on the secretion of TGF β 1 in cultured human fibroblasts and the intervention of JNK inhibitor. Methods The callan foreskin fibroblasts were cultured and divided into 2 groups. In the IPL treatment group, cells were irradiated with IPL with fluences of 0 (negative control), 10, 18, 27, 36, and 36 J/cm² × 2 (irradiated with IPL with fluences of 36 J/cm² twice). In the IPL + inhibitor group, cells were irradiated with IPL with fluences of 36 J/cm² after incubation with the inhibitor SP600125 for 2 h. TGF β 1 in the culture supernatant was evaluated 48 h after the irradiation using enzyme linked immunosorbent assay. Results Compared with the negative control, TGF β 1 in the culture supernatant decreased at the IPL irradiation of 10, 18, 27, and 36 J/cm², whereas TGF β 1 increased at the IPL irradiation of 36 J/cm² × 2. In the IPL + inhibitor group, the concentration of TGF β 1 in the culture supernatant decreased compared with the controls (P<0.05). Conclusion IPL can suppress the secretion of TGF β 1 at the lower fluence and promote the secretion at a higher fluence. JNK inhibitor may play an inhibitive role when IPL regulates the TGF β 1 secretion in cultured human fibroblasts. IPL may stimulate TGF β 1 secretion of the fibroblast cells in human skin via JNK signal pathway.

Keywords: intense pulsed light; fibroblasts; JNK; transforming growth factor β 1

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