

论著

转染抗辐射菌recO基因对紫外线所致皮肤成纤维细胞氧化及炎症损伤的保护作用

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摘要 背景与目的: 观察转染recO基因对紫外线(UVB)诱导的人皮肤成纤维细胞(HSF)抗氧化能力及某些炎症因子分泌的影响。材料与方法: 从抗辐射菌(deinococcus radiodurans,Dr)中克隆recO基因连接到pcDNA3.1/NT-GFP-TOPO载体上并转染HSF细胞, recO转染组分别以0、30、90、120 mJ/cm²的紫外线(UVB)进行照射, 同时设未转染空白组及转染空质粒组2个对照。检测各组受试细胞总超氧化物歧化酶(SOD)、丙二醛(MDA)、乳酸脱氢酶(LDH)、白细胞介素6(IL-6)和肿瘤坏死因子- α (TNF- α)的变化。结果: UVB照射24 h后, 未转染空白组和转染空质粒组总SOD活性水平随UVB照射剂量的增加而下降, MDA、LDH、IL-6及TNF- α 含量则随照射剂量的增加而增加, 而转染recO组细胞在接受与对照组同等剂量的UVB照射后, SOD分泌增加, IL-6分泌减少, 在30~120 mJ/cm²剂量范围内与2个对照组相比差异均具有统计学意义(P均<0.05), 而MDA、LDH及TNF- α 水平变化不明显(P>0.05)。结论: 转染recO基因对UVB照射引起的HSF细胞氧化及某些炎症损伤具有一定的保护作用。

关键词 [recO基因](#); [UVB](#); [皮肤成纤维细胞](#)

Protective Effect of Transfection of recO Gene from Deinococcus Radiodurans on Oxidation and Inflammatory Injury of UVB-induced HSF in Vitro

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Abstract BACKGROUND AND AIM: To study the effects of the transfection of recO gene in vitro on the oxidation resistance and the secretion of some inflammatory factors of human skin fibroblasts (HSF) exposed to UVB. MATERIALS AND METHODS: The recO gene from deinococcus radiodurans was cloned into pcDNA3.1/NT-GFP-TOPO vector, and was introduced into human skin fibroblasts, cells which were then irradiated with 0, 30, 90, 120 mJ/cm² doses of UVB. The untransfection group and the blank vector transfected group, were also treated with the same doses of UVB as controls. The activity of LDH and SOD, and the content of MDA, IL-6 and TNF- α in each group were detected. RESULTS: After UVB exposure for 24 h, the activity of total SOD decreased, and the activity of LDH and the content of MDA, IL-6 and TNF- α increased with increasing of UVB doses in the two control groups. However, the SOD activity increased and the IL-6 secretion decreased in the recO transfection group exposed to the same dose of UVB. There were significant differences of the SOD activity and IL-6 secretion between the test group and the control groups in the 30-120 mJ/cm² range (P<0.05). CONCLUSION: To a certain extent, the transfection of recO gene could inhibit the oxidative damage and the generation of some inflammatory factors, which were induced by UVB irradiation.

Keywords [recO gene](#) [UVB irradiation](#) [skin fibroblasts](#)

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