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Correlation of oxygen free radical items between blood and kidney of chronic renal failure rat

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Abstract The correlation of oxygen free radical items between blood and kidney of 5/6 nephrectomy-induced chronic renal failure rats was studied. It was found that oxygen free radicals played an important role in the impairment of remnant kidney, and antioxidant vitamin E could protect remnant kidney from the impairment caused by oxygen free radicals, and that, both in normal and chronic renal failure conditions, plasma lipid peroxides and vitamin E concentration and superoxide dismutase activity of red blood cells correlated very well with corresponding items of remnant kidney. These results suggested that blood oxygen free radical items could reflect renal oxygen free radical metabolic status in chronic renal failure patients.

Key words kidney failure, chronic; rat; blood; kidney; free radicals

抗内毒素类脂A单克隆和基因工程单链抗体的研究*

Study on monoclonal and antibody of genetic engineering single chain against lipid A of bacterio-endotoxin

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本研究用J5突变株免疫BALB/C小鼠经细胞融合技术获得了一株分泌抗LPS类脂A的单克隆的杂交瘤细胞系,命名为9G6 MAb。Ig亚类分析证明其属IgM抗体。体内外的一系列实验证实9G6单克隆抗体对革兰氏阴性杆菌的菌体和LPS具有广谱和高效价中和能力。在小鼠体内可抵抗多种革兰氏阴性杆菌的菌体和LPS对小鼠的攻击,表现了良好的保护活性,临床的初步应用研究表明抗LPS类脂A抗体,可以明显降低严重烧伤病人血中内毒素水平,同时降低由LPS入血而引起的体内炎症细胞因子和介质的高水平表达,显示了初步的治疗效果。

在此基础上,本文应用基因工程技术从分泌9G6单克隆抗体的杂交瘤细胞中提取mRNA后反转录成cDNA第一链。用特异性轻、重链引物扩增反应产物,获得重链(340 bp)和轻链(320 bp)基因片段,经纯化后将V_H和V_L基因用一多肽连接物连接,构成单链抗体基因。单链抗体基因经再次扩增并加入酶切位点后克隆于pCANTAB5噬菌粒中再转化于感受态的TG_1细菌中,在援助噬菌体KO7的救援下产生可表达ScFv抗体的重组噬菌体。通过噬菌体抗体库技术筛选重组噬菌体,最后在E. Coli TG_1中表达了9G6单链抗体基因。ELISA阻断试验初步证明了该单链抗体能特异性阻断其9G6 MAb对LPS的结合,表明具有较好的抗原结合活性。

关键词 灼伤;感染;内毒素;类脂A;抗体,单克隆;细胞因子;单链抗体;分子克隆;基因表达

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